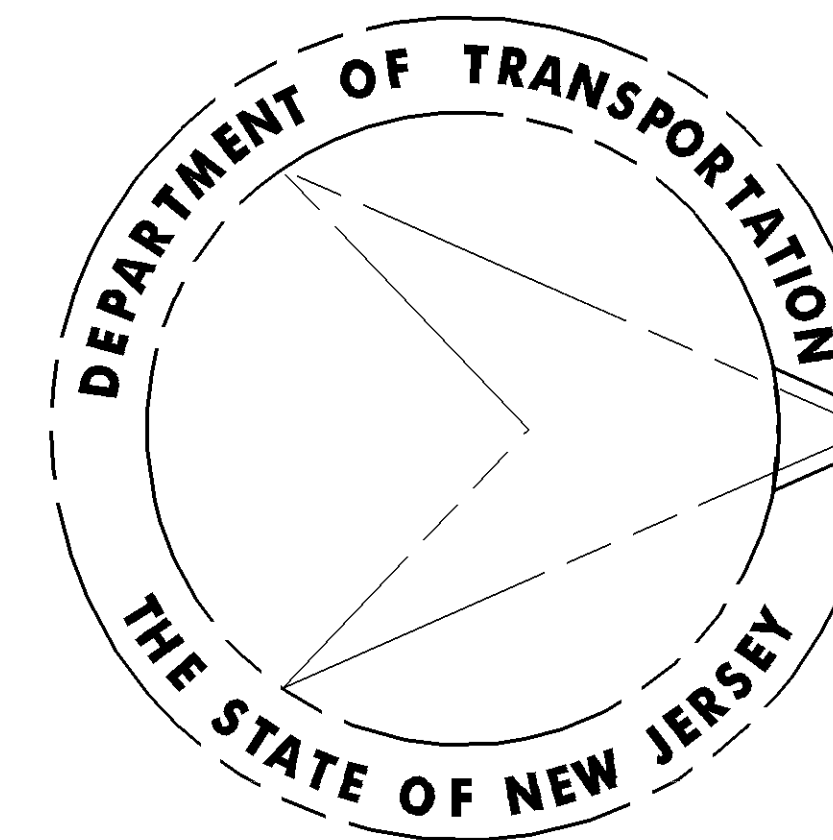


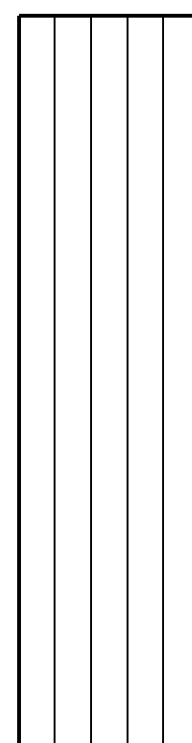
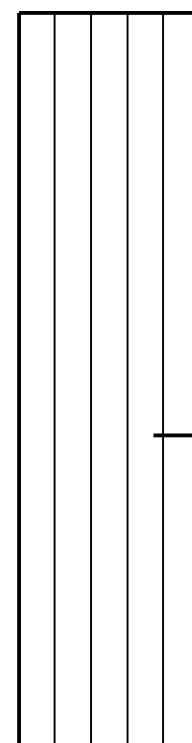
State of New Jersey
Department of Transportation



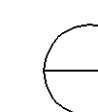
**STANDARD ELECTRICAL
DETAILS**

JULY 2001
(U.S CUSTOMARY ENGLISH UNITS)

REFERENCE



EDC 000-002 - ORIGINAL SHEET



INDEX FOR STANDARD ELECTRICAL DETAILS

DRAWING NUMBER	D E S C R I P T I O N	DRAWING NUMBER	D E S C R I P T I O N	DRAWING NUMBER	D E S C R I P T I O N
T-0101	TRAFFIC SIGNAL POLE - TYPE "T" WITH CABLE OUTLET, SHOE BASE & CAP DETAILS	T-1501	DETAILS FOR FLASHING SCHOOL SIGNS	L-0101	LIGHTING STANDARD ASSEMBLY
T-0201	TRAFFIC SIGNAL ALUMINUM TRANSFORMER BASE PART No. TB-20	T-1601	TYPICAL DETAILS FOR MCF, P & P-MC FOUNDATIONS	L-0201	METER CABINET TYPE 2M 240/480 VOLT AND 2M-MC 240/480 VOLT
T-0301	TRAFFIC SIGNAL MAST ARM 15', 20' & 25' WITH CLAMP DETAILS FOR TYPE "T" & "C" STANDARDS, & SAFETY CHAIN INSTALLATION	T-1701	TYPICAL DETAILS FOR SFT, SFK & SPF FOUNDATIONS	L-0301	METER CABINET FOUNDATION TYPE "1-M", "2-M", "1M-MC", "2M-MC" & "MCF"
T-0401	UNIVERSAL JOINT, WIRE OUTLET, MAST ARM SLIP FITTER, POST TOP ADAPTER AND ELEVATOR PLUMBIZER	T-1801	TYPICAL TRAFFIC SIGNAL INSTALLATION	L-0401	JUNCTION BOX FOUNDATION "JBF" CAST IN PLACE TYPE
T-0501	DETAILS OF SIGNAL ASSEMBLY SPIDER AND T-BAR	T-1901	METER CABINET TYPE "T" AND "TL" ELECTRICAL INSTALLATION	L-0501	JUNCTION BOX FOUNDATION "JBF", 18" x 36" JUNCTION BOX "JB" PRECAST TYPE
T-0601	POLE CLAMP MOUNTING	T-2001	LOOP DETECTOR TRENCH & LOOP DETECTOR	L-0601	18" x 36" JUNCTION BOX CAST IN PLACE TYPE, TYPICAL INSTALLATION OF JUNCTION BOX & UNDER ROADWAY CONDUIT
T-0701	TRAFFIC SIGNAL PEDESTAL, SLIP FITTER, PUSH BUTTON STANDARD & ANCHOR BOLT	T-2101	OPTICALLY PROGRAMMED AND MIDMAST MOUNTING DETAILS	L-0701	METER CABINET, TYPE 1M. 120/240 VOLT AND TYPE 1M-MC, 120/240 VOLT
T-0801	TRAFFIC SIGNAL POLE, TYPE "C" WITH CABLE OUTLET, SHOE BASE AND CAP DETAIL	T-2201	SIGN FOUNDATIONS TYPE "SSF" & "SSF-A"	L-0901	METER CABINET DETAILS TYPE "L" ELECTRICAL INSTALLATION
T-0901	TRAFFIC SIGNAL MAST ARM 15', 20' & 25' WITH CLAMP DETAIL FOR TYPE "K" POLE	T-2901	SPECIAL FOUNDATION "SFX" BARRIER CURB	L-1001	SIGN LIGHTING ASSEMBLY FOR "60" SIGNS
T-1001	TRAFFIC SIGNAL POLE TYPE "K" WITH CABLE OUTLET, SHOE BASE, CAP, TRANSFORMER BASE & TRAFFIC SIGNAL STANDARD TYPE "KE"	T-3401	STEEL POLE AND ARM DETAILS FOR ELECTRICAL SIGNS	L-1101	BRIDGE DETAILS
T-1101	STEEL TRAFFIC SIGNAL POLE AND ARM DETAILS	T-3501	METER CABINET DETAILS FABRICATED TYPE	L-1301	CAPPING DETAILS FOR JBF & 18" x 36" JUNCTION BOX
T-1201	TRAFFIC SIGNAL MAST ARM-TROMBONE TYPE WITH CLAMP DETAIL FOR TYPE "T" & "C" POLES	T-3801	17" x 30" COMPOSITION JUNCTION BOX	L-1401	TYPE "M" METER CABINET
T-1301	TRAFFIC SIGNAL STANDARD, TYPE SC AND ARM ASSEMBLY DETAILS	T-3901	38" JUNCTION BOX	L-1501	ALUMINUM TRANSFORMER BASE DETAILS PART No. NJTB - 30
T-1401	"RED SIGNAL AHEAD" SIGN (FIBER OPTICS)	T-4001	ROADWAY JUNCTION BOX PRECAST	L-1701	SCHEMATIC WIRING DIAGRAM
		T-4201	RIGID NON-METALLIC CONDUIT INSTALLATION FOR FIBER OPTICS	L-1801	LIGHTING STANDARD ASSEMBLY
		T-4301	STEEL TRAFFIC SIGNAL POLE FOUNDATION DETAILS	L-1901	DETAIL OF TYPICAL UNDERDECK LIGHTING ASSEMBLY INSTALLATION
		T-4401	RIGID NON-METALLIC MULTIDUCT CONDUIT INSTALLATION FOR FIBER OPTICS	L-2001	(SHEET 1 OF 2) TOWER LIGHTING STANDARD ASSEMBLY TYPE TL-100-8
		T-4501	OVERHEAD MAST ARM ADJUSTABLE SWING SIGN BRACKETS	L-2001	(SHEET 2 OF 2) TOWER LIGHTING STANDARD ASSEMBLY TYPE TL-100-8
				L-2101	LIGHTING ALUMINUM TRANSFORMER BASE PART No. TB-17 (BREAKAWAY)

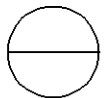
REFERENCE

--	--	--	--	--

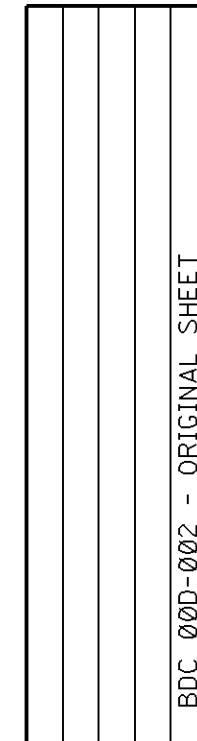
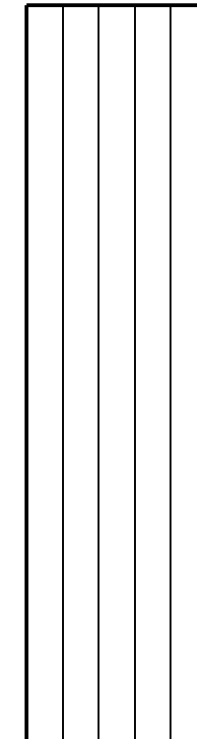
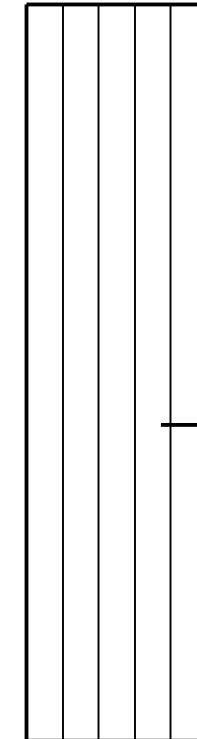
--	--	--	--	--

--	--	--	--	--

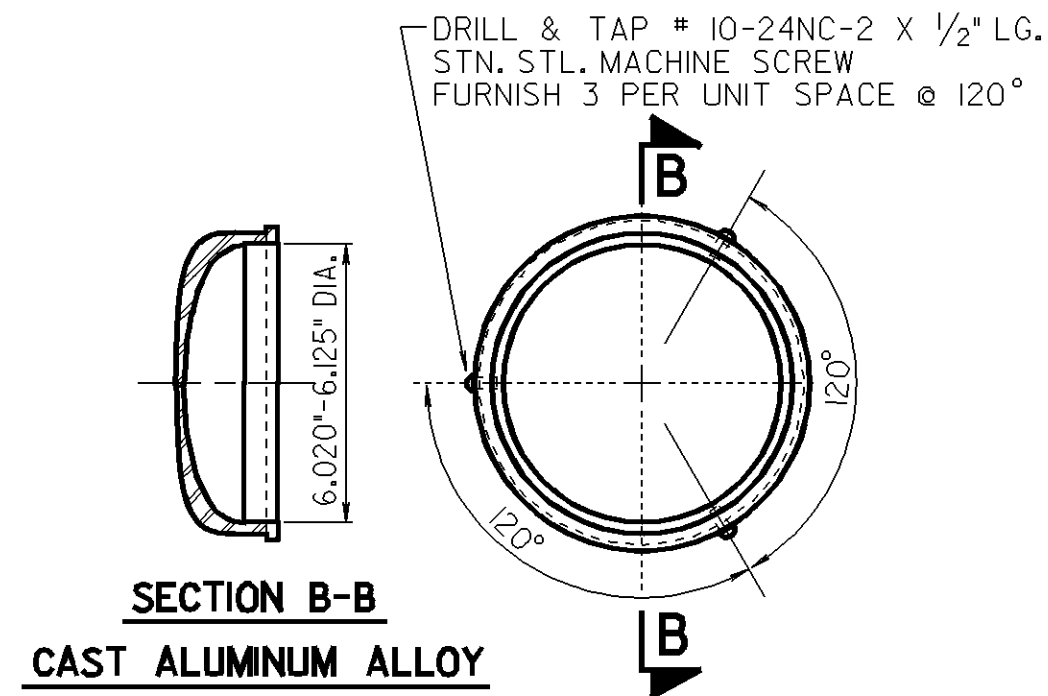
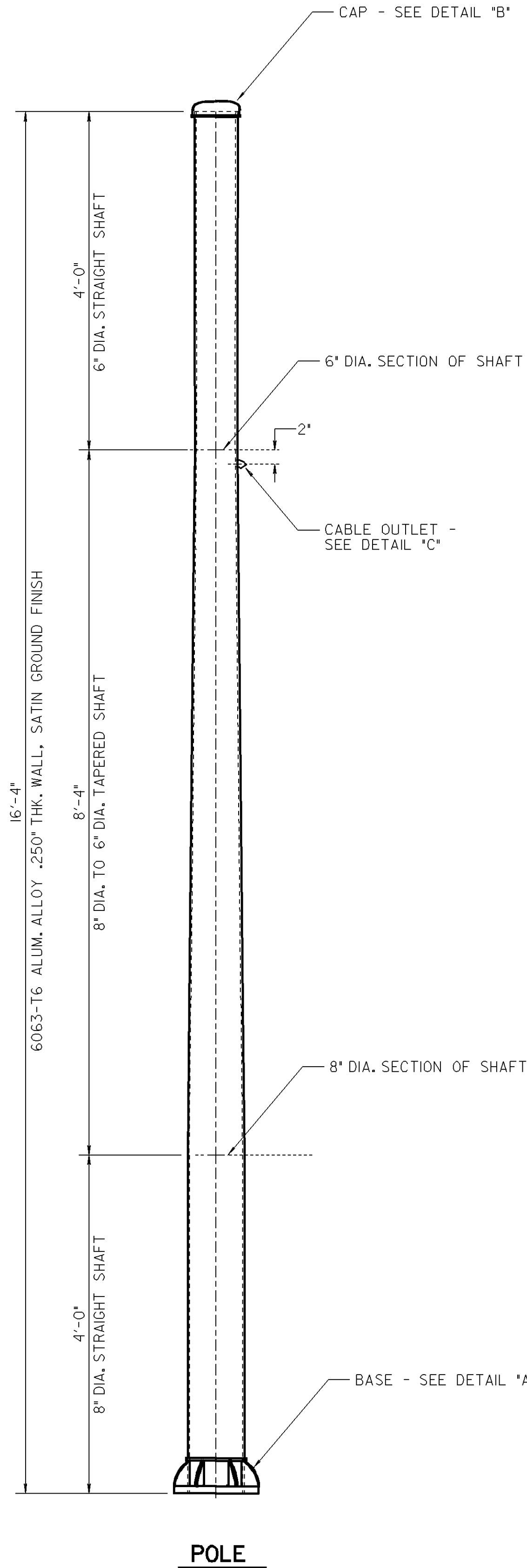
BDC 000-002 - ORIGINAL SHEET



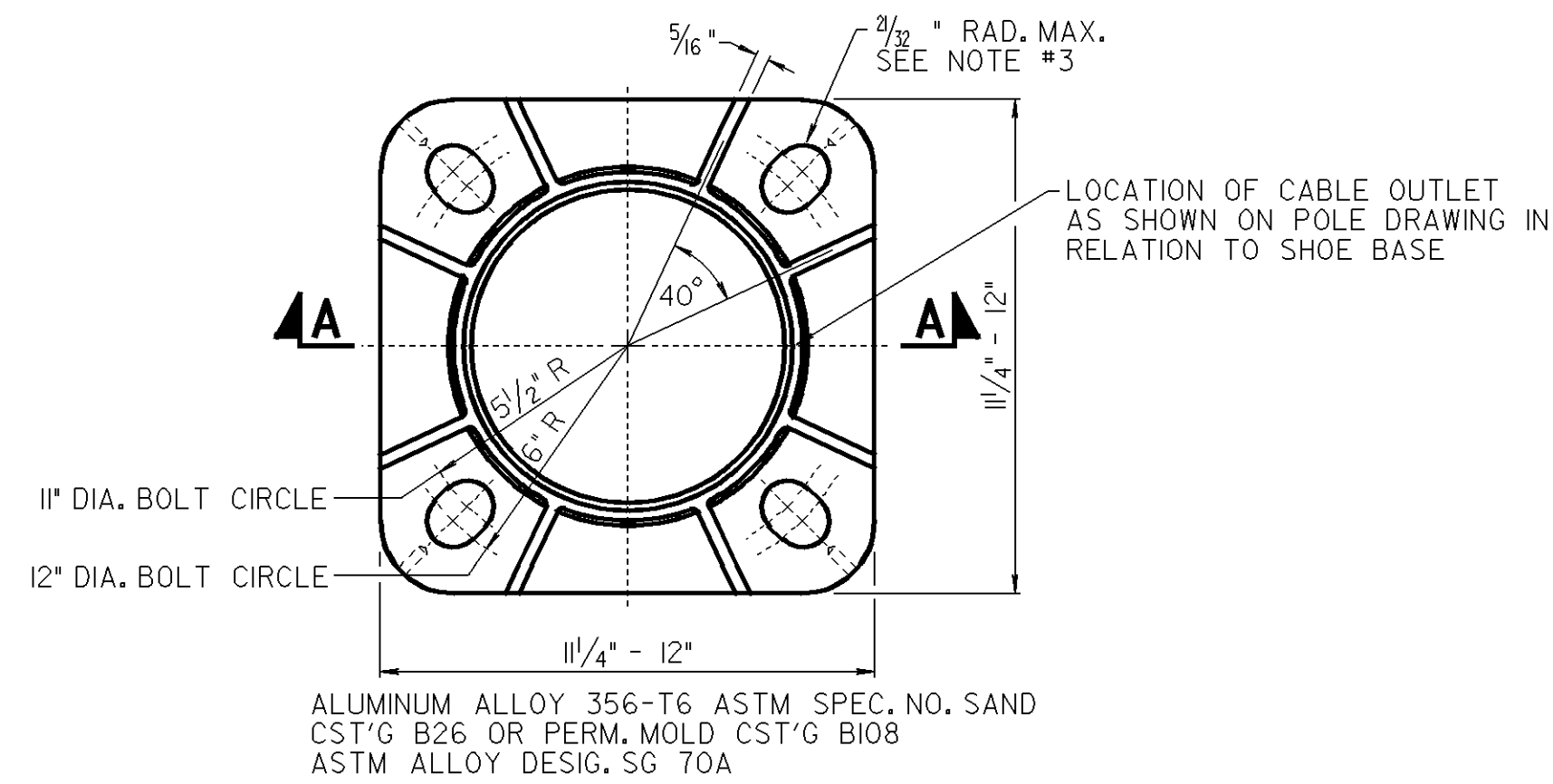
REFERENCE



BDC 000-002 - ORIGINAL SHEET



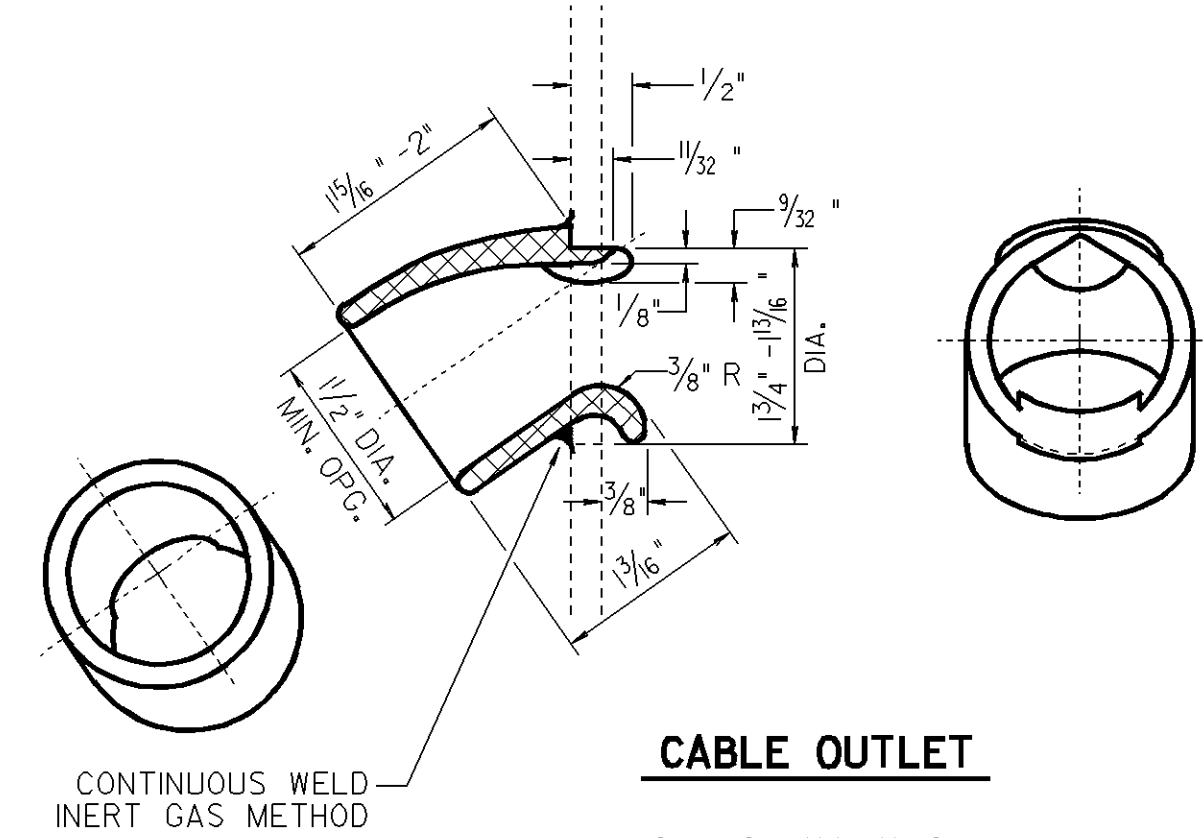
CAST ALUMINUM CAP
DETAIL 'B'



SECTION A-A

ALUMINUM SHOE BASE
DETAIL 'A'

POLE SHALL NOT BE INSTALLED WITHOUT ARM



CABLE OUTLET

CAST ALUMINUM ALLOY
DETAIL 'C'

FURNISH WITH EACH POLE

- 4 - 1" DIA. X 3 1/2" LONG HEX HEAD BOLTS, 8 THREADS PER INCH CLASS 2 - FREE FIT STAINLESS STEEL ASTM A193 GRADE B8
- 8 - 1" DIA. PLAIN WASHERS, STAINLESS STEEL (4 - 2" O.D., 4 - 2 1/2" O.D.)
- 4 - 1" DIA. LOCK WASHERS, STAINLESS STEEL
- 4 - 1" DIA. HEX NUTS, STAINLESS STEEL
- 4 - BOLT COVERS ALUMINUM ALLOY WITH STAINLESS STEEL SCREWS
- 1 - POLE CAP

NOTES:

- UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH CURRENT AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
- ALL TOLERANCES OF CASTINGS SHALL BE $\pm 1/32$ ".
- HOLE SHALL BE OF SUFFICIENT DIAMETER TO ACCEPT 1" DIAMETER BOLT.
- INSTALL NUTS AND WASHERS OUTSIDE "T" BASE

NEW JERSEY DEPARTMENT OF TRANSPORTATION

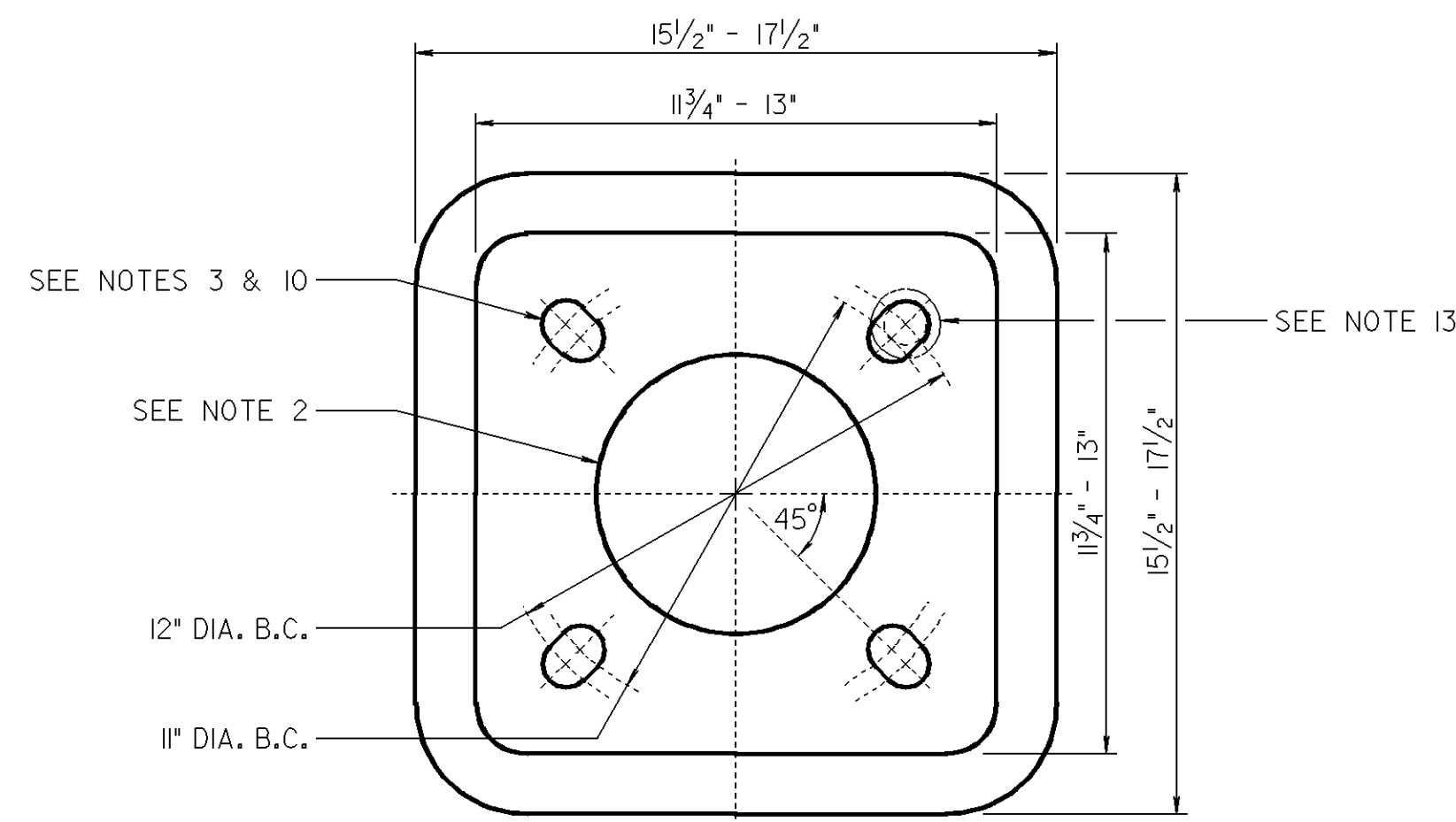
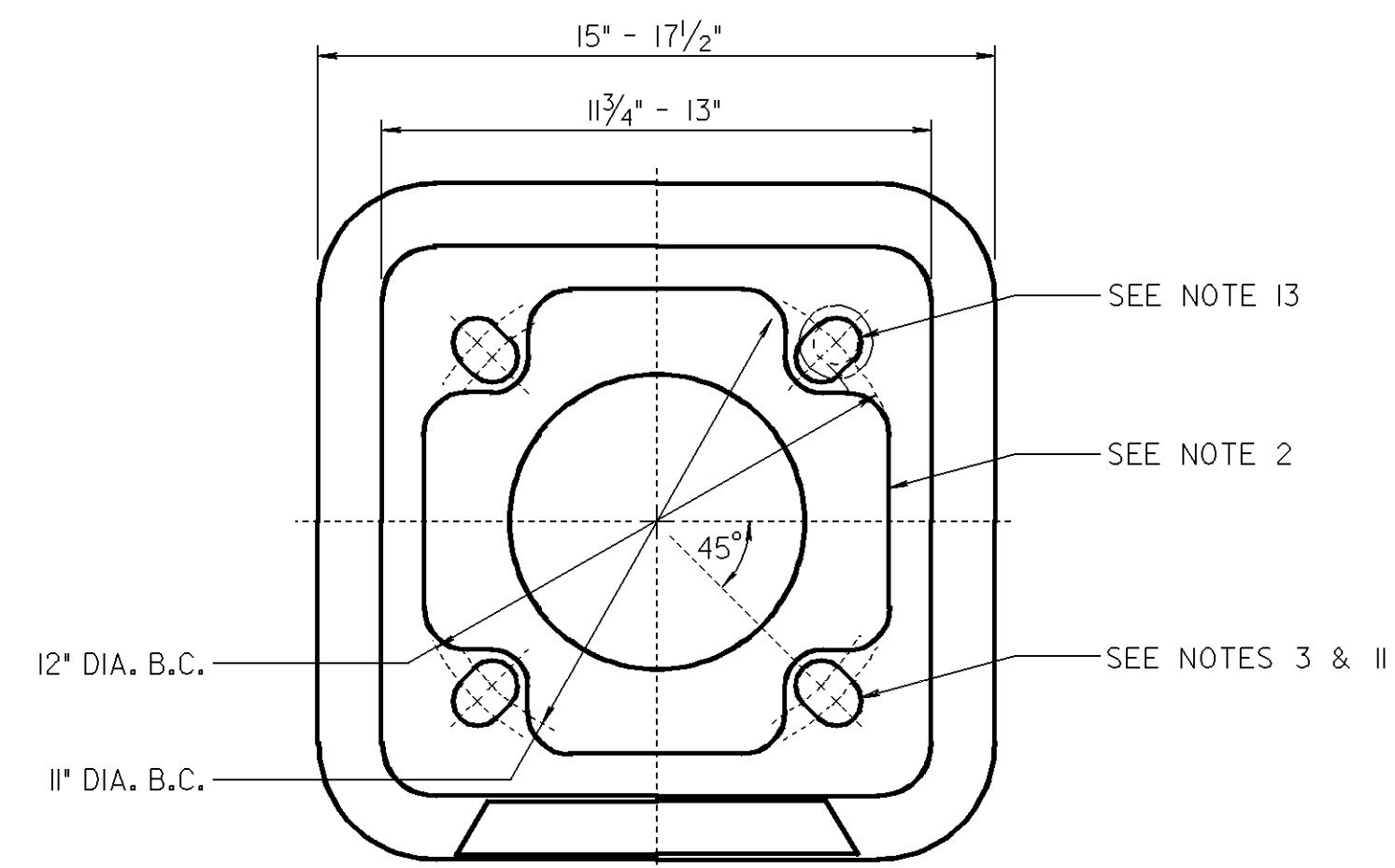
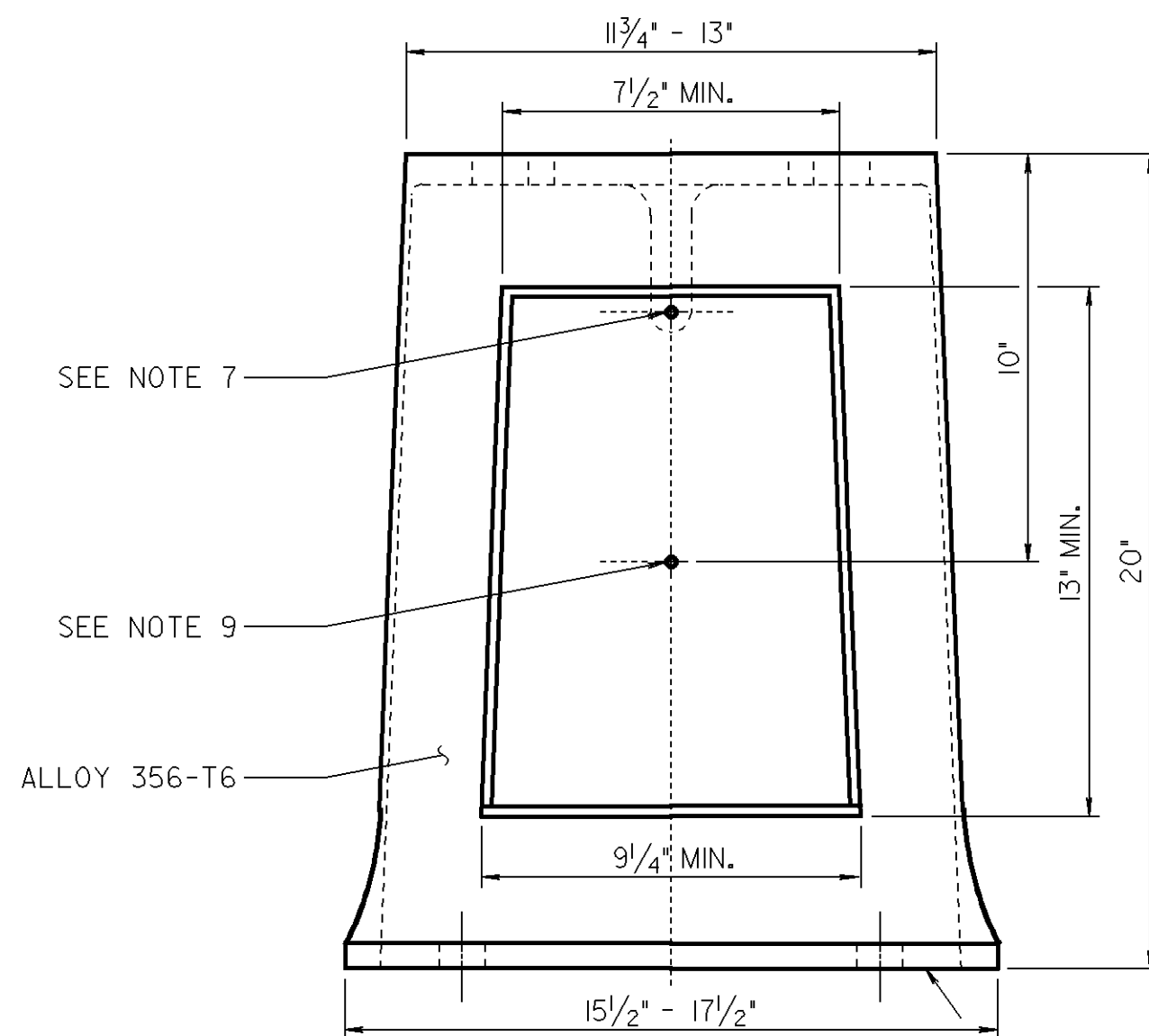
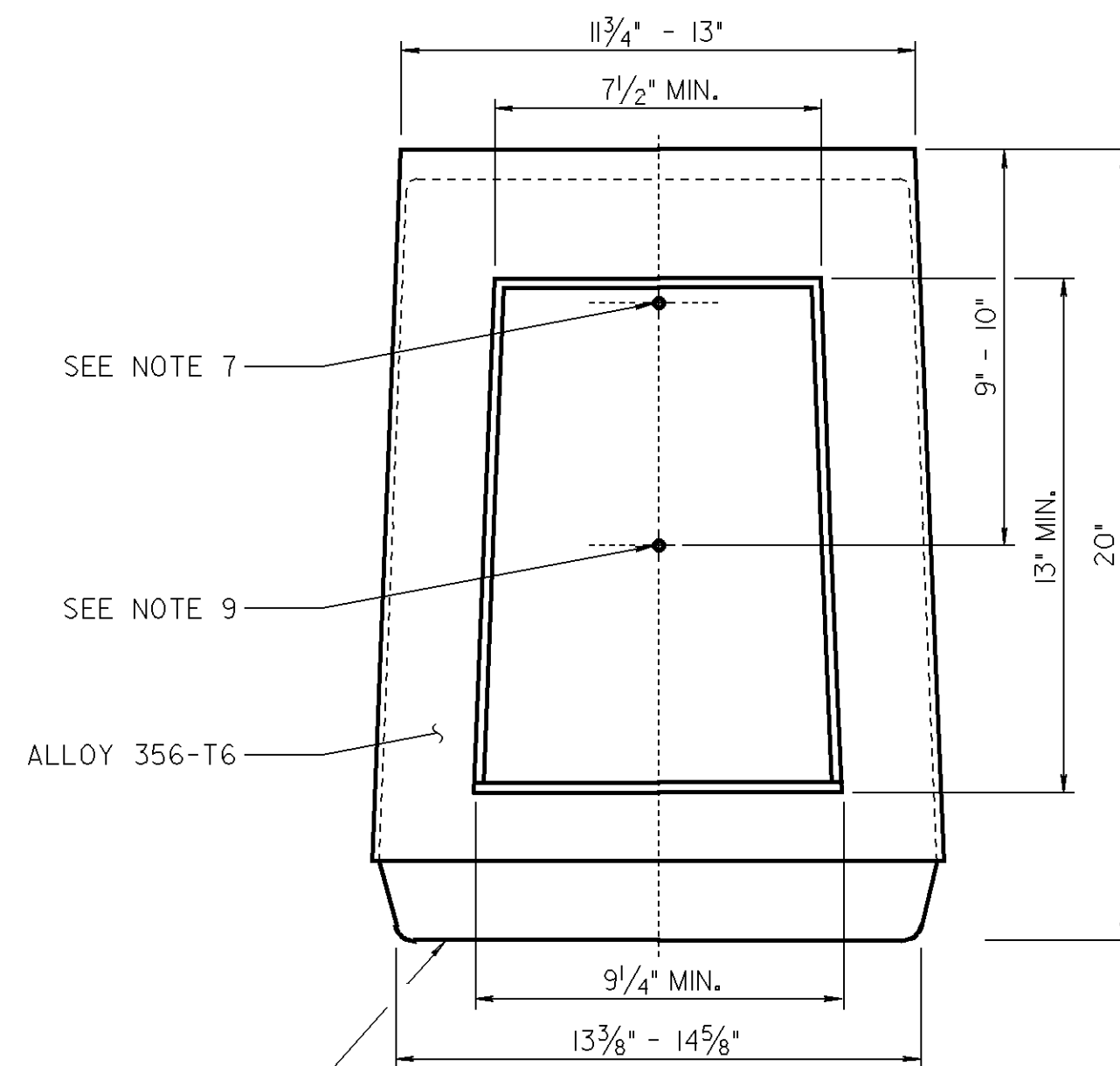
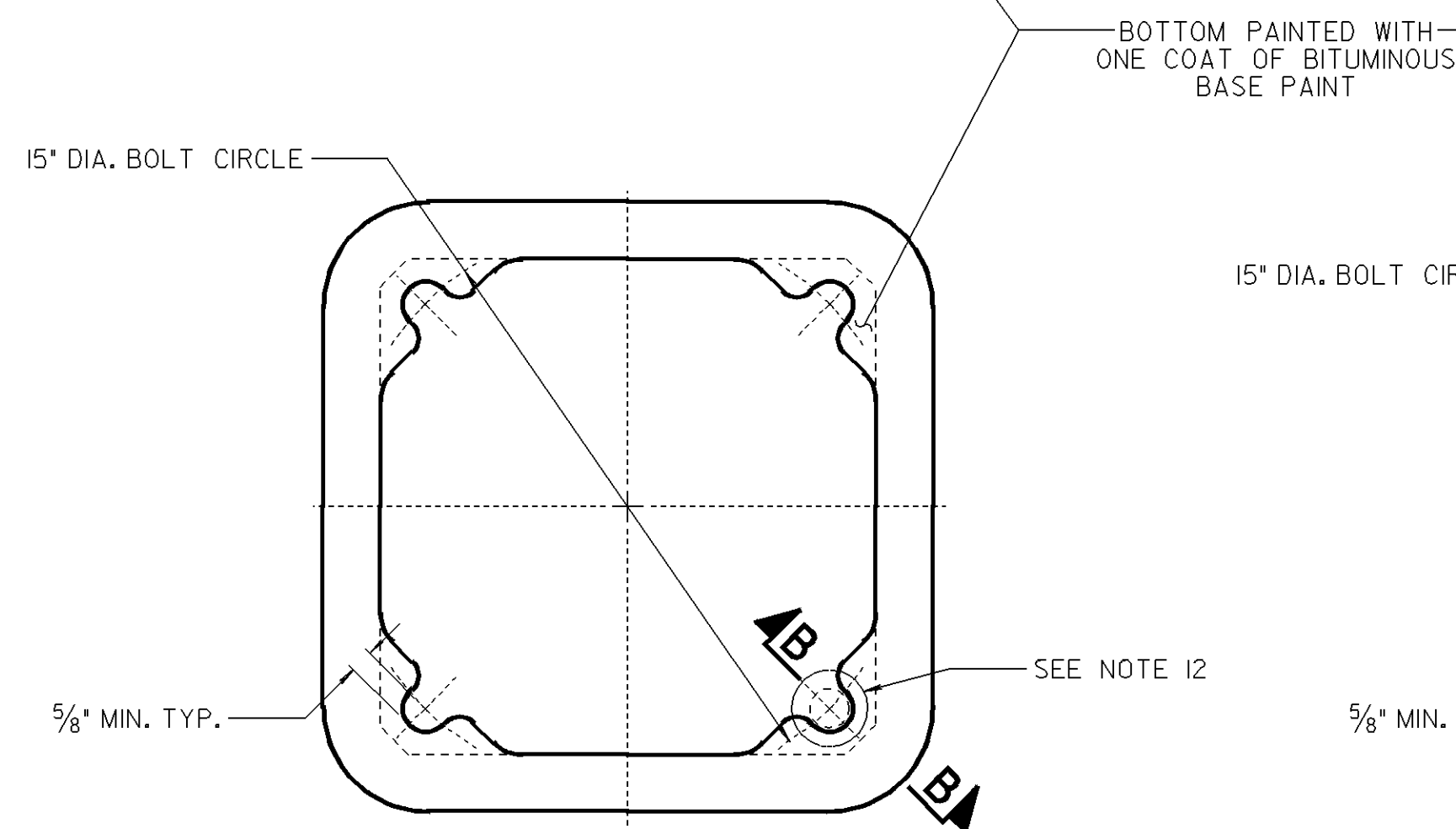
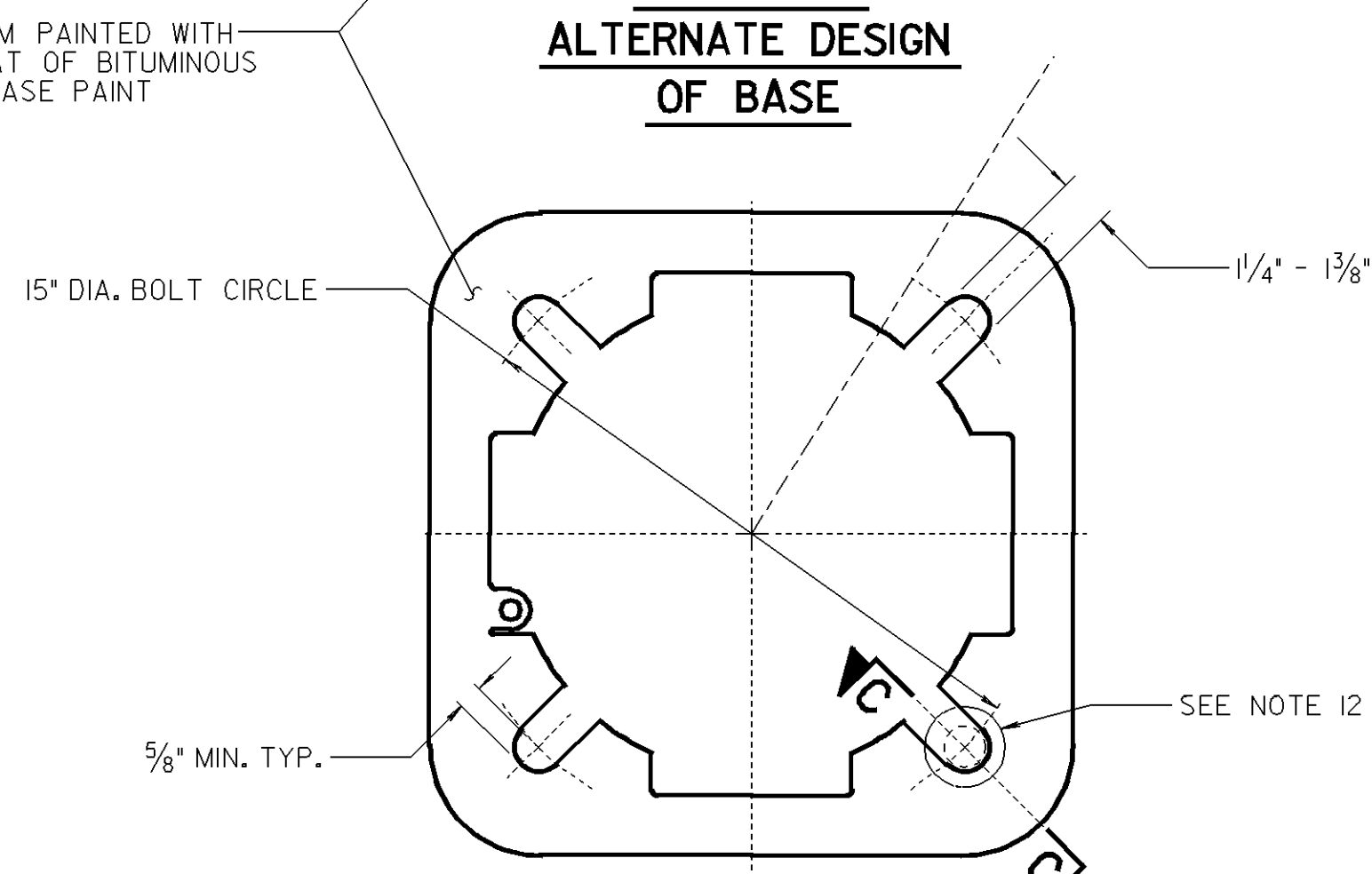
ELECTRICAL DETAILS

N.T.S.

TRAFFIC SIGNAL POLE - TYPE "T" WITH
CABLE OUTLET, SHOE BASE & CAP DETAILS

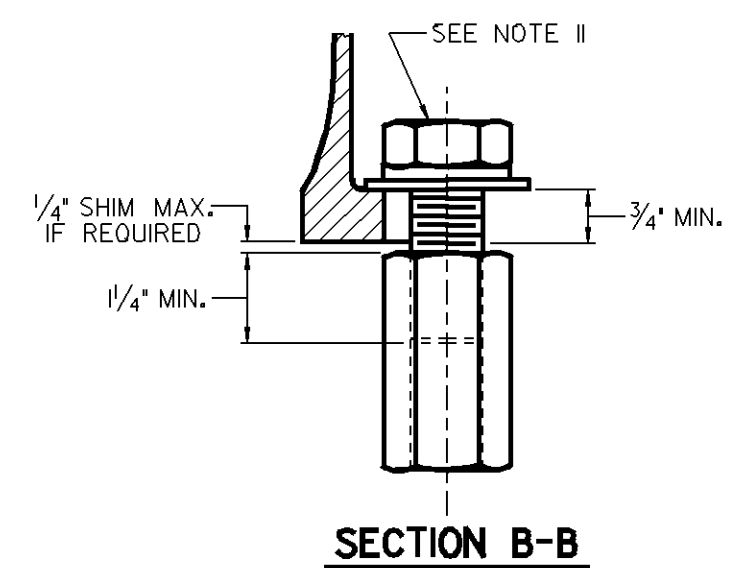
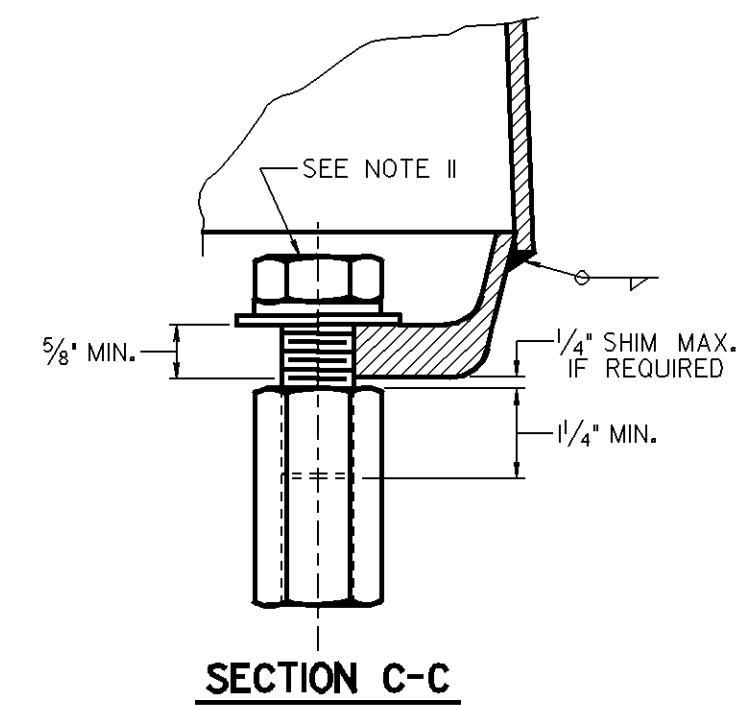
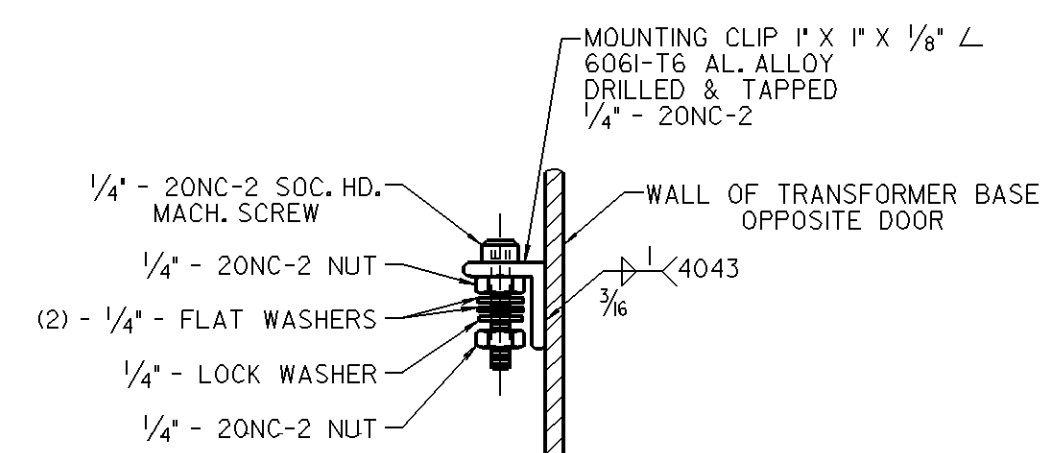
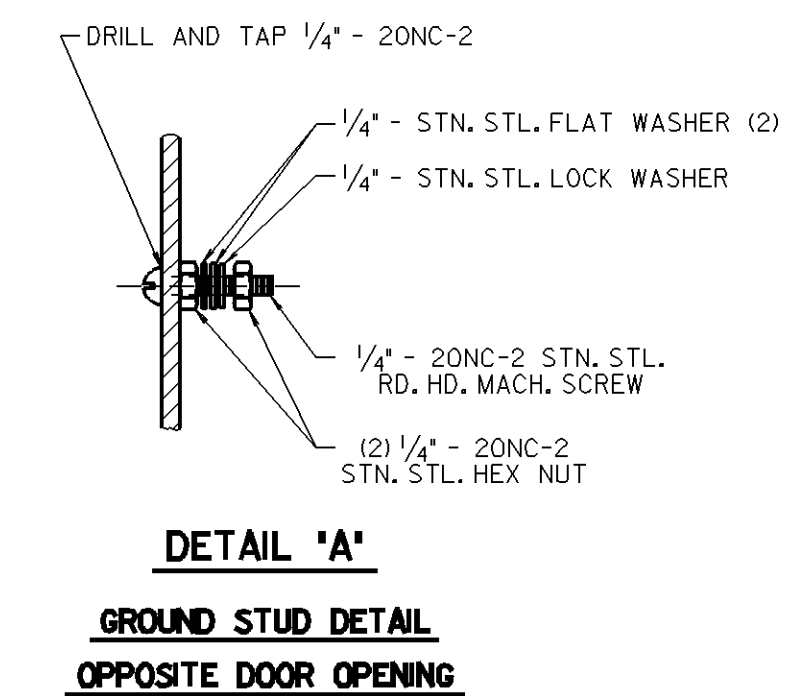
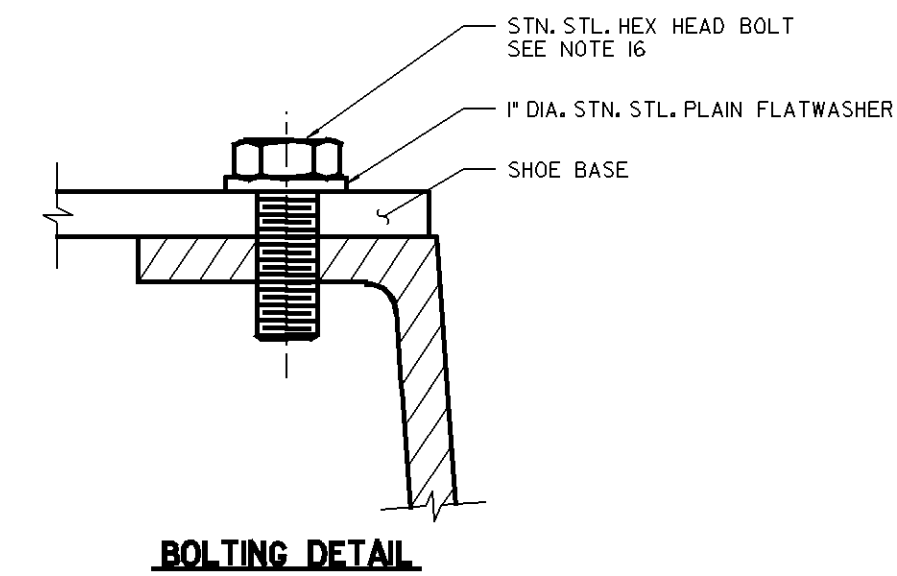
T-0101



**TOP VIEW****TOP VIEW****ELEVATION****ELEVATION
ALTERNATE DESIGN
OF BASE****PLAN VIEW OF BASE****PLAN VIEW OF BASE****NOTES**

1. BASE SHALL MEET THE STRENGTH REQUIREMENTS NECESSARY TO SUPPORT THE MAXIMUM OVERTURNING MOMENT THAT A TYPE "C" STANDARD MEETING THE REQUIREMENTS OF DETAIL T-08 WILL SUPPORT.
2. OPENINGS SHALL HAVE A MINIMUM DIAMETER OF 6". THE GEOMETRY SHALL BE DETERMINED BY MANUFACTURER.
3. SLOT SHALL BE OF SUFFICIENT SIZE TO ACCEPT 1" DIA. BOLTS ON A 11" THRU 12" DIA. BOLT CIRCLE.
4. SUPPLIER SHALL FURNISH DETAIL DRAWINGS OF TRANSFORMER BASE FOR APPROVAL.
5. CERTIFIED MILL TEST REPORTS SHALL BE FURNISHED THAT ALLOYS AND TEMPER SHOWN MEET REQUIREMENTS AS INDICATED ON DRAWING.
6. UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH CURRENT AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
7. PROVIDE PLASTIC DOOR TYPE - ABS PLASTIC MODIFIED FOR UV RESISTANCE. STEEL GRAY COLOR 1/8" MINIMUM THICK. ATTACH DOOR TO BASE WITH AN APPROVED VANDAL RESISTANT LOCKING DEVICE USING A 1/4" OR 3/8" STN. STL. GRADE B8 SOCKET HD. CAP SCREW. AS AN ALTERNATE A FIBERGLASS DOOR WITH UV INHIBITORS MAY BE UTILIZED.
8. FLAT WASHERS SHALL BE SUPPLIED FOR THE BASE AS PER MANUFACTURERS REQUIREMENTS.

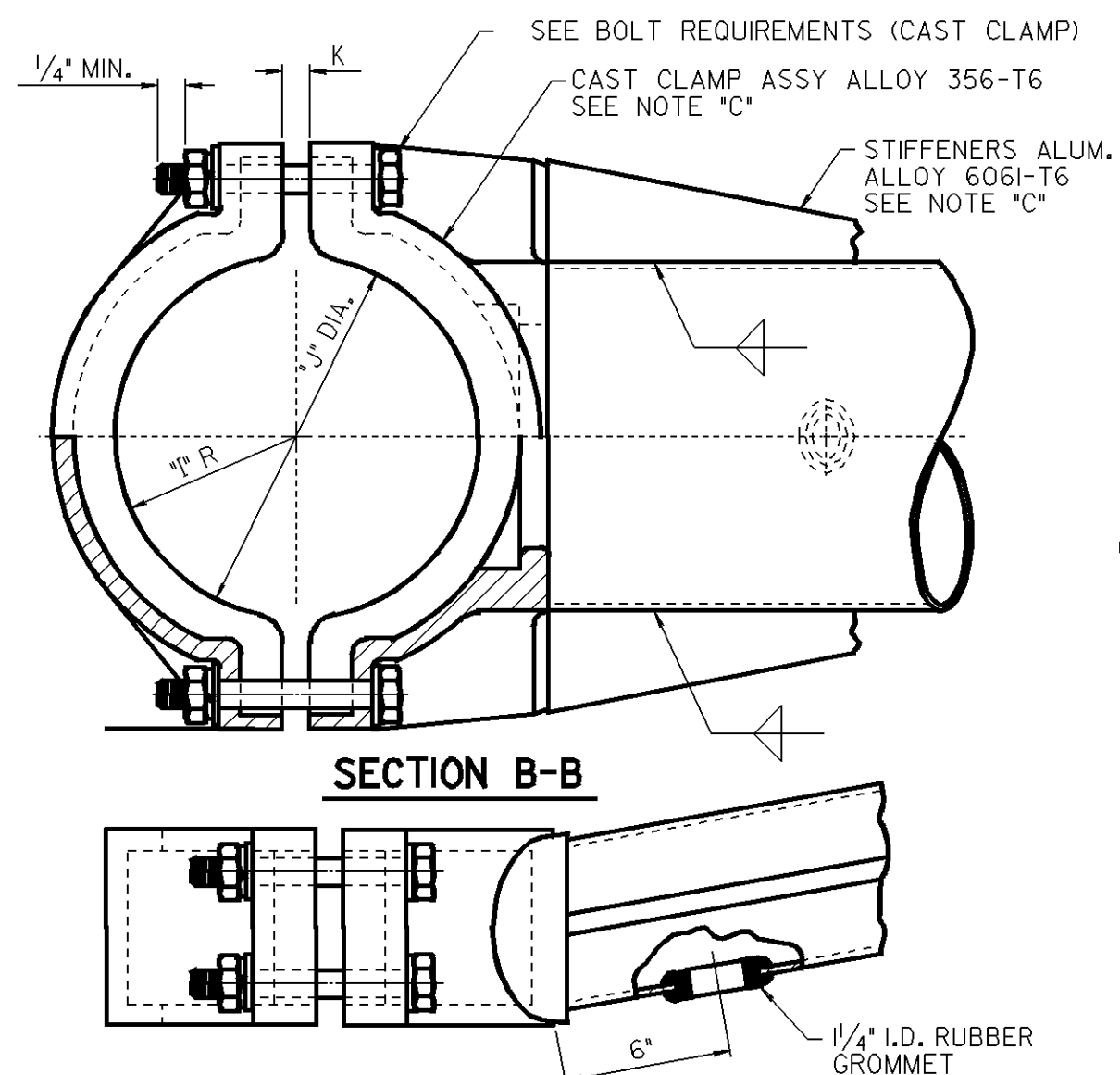
9. DRILL AND TAP HOLE FOR 1/4" - 20NC-2 STN. STL. GROUND STUD OPPOSITE DOOR (SEE DETAIL "A" OR ALTERNATE DETAIL "D")
10. THE MAXIMUM LENGTH OF THE SLOT SHALL BE SUCH THAT WHEN A 11 1/4" SQUARE SHOE BASE IS MOUNTED ON TOP OF THE TRANSFORMER BASE, THE SLOTS SHALL BE COMPLETELY COVERED BY SHOE BASE.
11. THE MAXIMUM THICKNESS OF BASE ALLOWED SHALL GUARANTEE 1/4" MINIMUM INSERTION INTO PUMPROD COUPLING OF 3" LG. ANCHOR BOLT WITH LOCK WASHER AND FLAT WASHER INSTALLED ASSUMING 1/4" SHIM.
12. THE BASE SHALL BE DESIGNED SUCH THAT THERE IS A 1/8" MINIMUM CLEARANCE FROM THE 2 1/2" FLAT WASHER TO THE INNER SIDES OF THE BASE.
13. THE BASE SHALL BE DESIGNED SUCH THAT THERE IS A 1/4" MINIMUM CLEARANCE FROM THE 1" FLAT WASHER TO THE OUTER SIDES OF THE BASE.
14. THE MANUFACTURER SHALL SUPPLY ALL OTHER HARDWARE WHICH IT IS NECESSARY TO INSTALL THE BASE AS WELL AS INSTRUCTION FOR INSTALLATION.
15. THIS BASE IS ONLY TO BE UTILIZED FOR TRAFFIC SIGNAL INSTALLATIONS.
16. DIAGRAM IS A METHOD OF INSTALLATION.



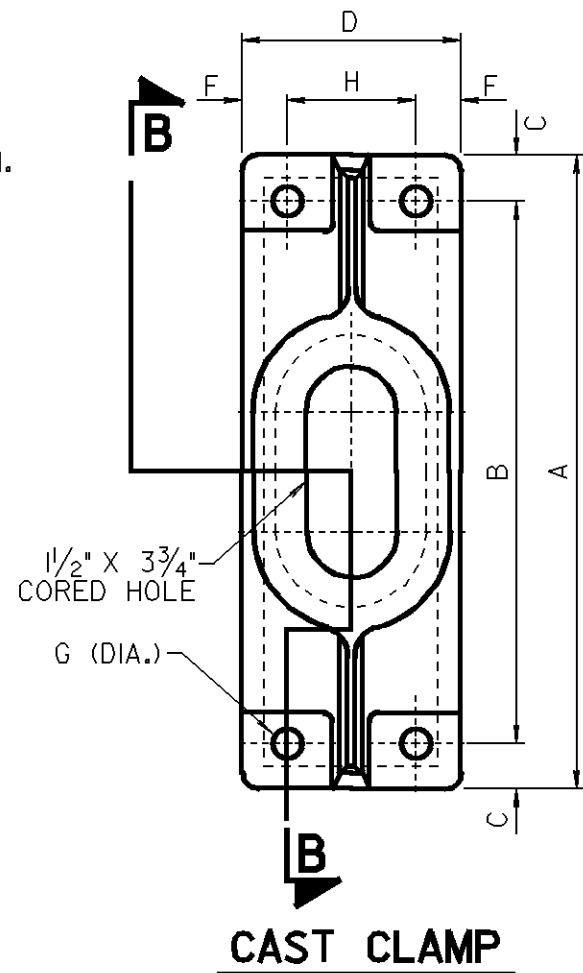
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.TRAFFIC SIGNAL ALUMINUM TRANSFORMER
BASE PART No. TB-20

T-0201



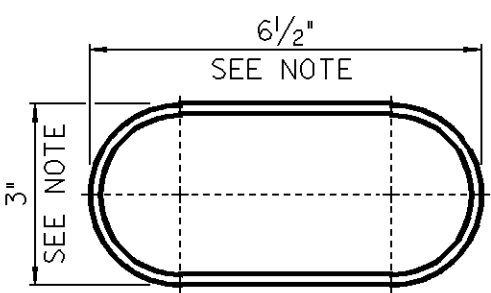
BOTTOM CLAMP DETAIL
ALUM. ALLOY 356-T6
MIN. DRAFT WHERE REQUIRED



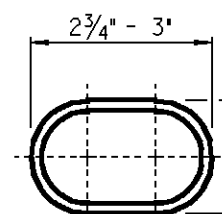
BOLT REQUIREMENTS

- 8 - 5/8" STN. STL. HEX HD. BOLTS, ASTM A193, GRADE B8
- 16 - 5/8" STN. STL. FLAT WASHERS
- 8 - 5/8" STN. STL. LOCK WASHERS
- 8 - 5/8" STN. STL. HEX NUTS

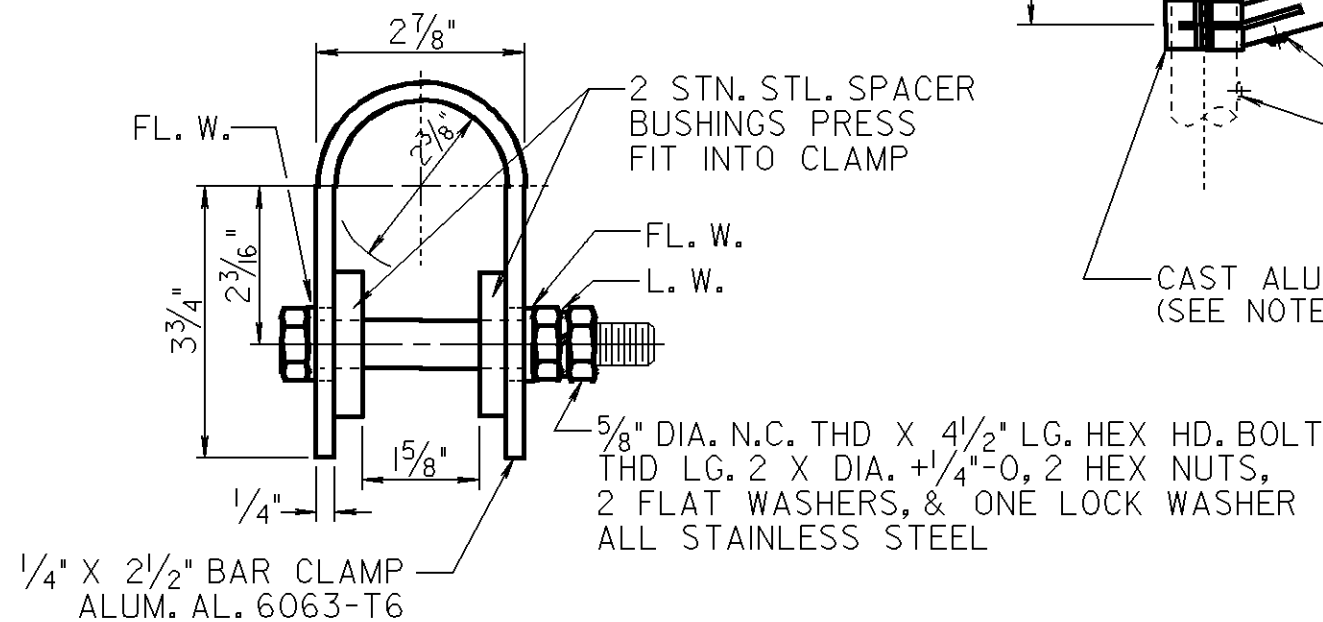
NOTE:
15', 20', & 25' MAST ARMS
MIN. 5" X 1/25" WALL TUBE
ELLIPSIZED TO APPROX.
3" X 6 1/2" SECTION



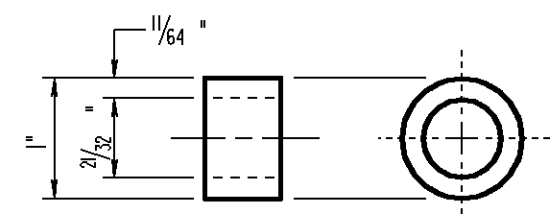
SECTION A-A
(TYPICAL BOTH MEMBERS)



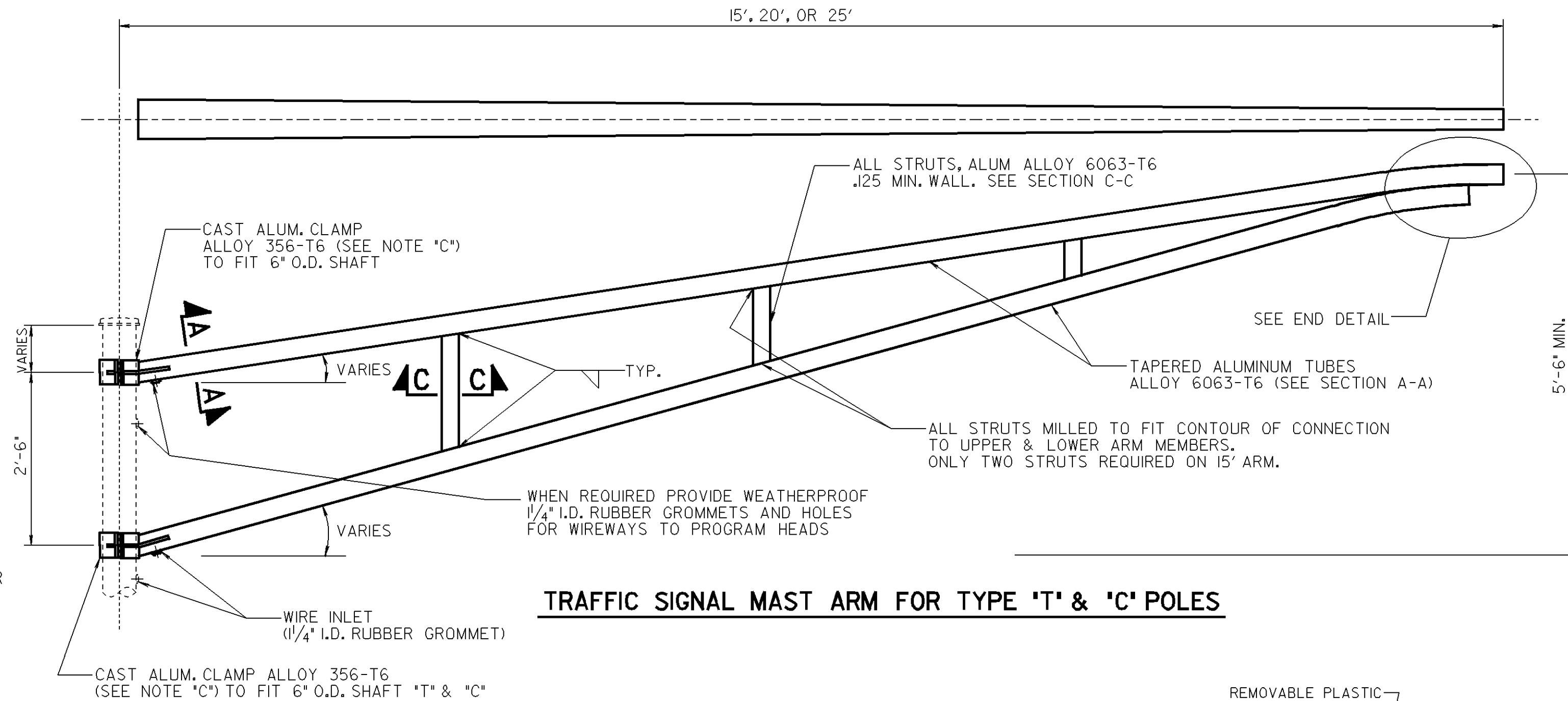
SECTION C-C
(TYPICAL ALL STRUTS)



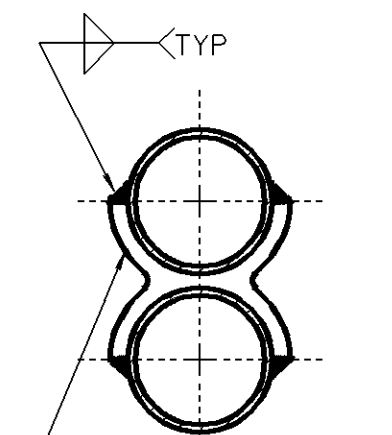
MOUNTING STRAP DETAIL
(FOR ALTERNATE MOUNTING STRAP
SEE DETAIL ON THIS SHEET)



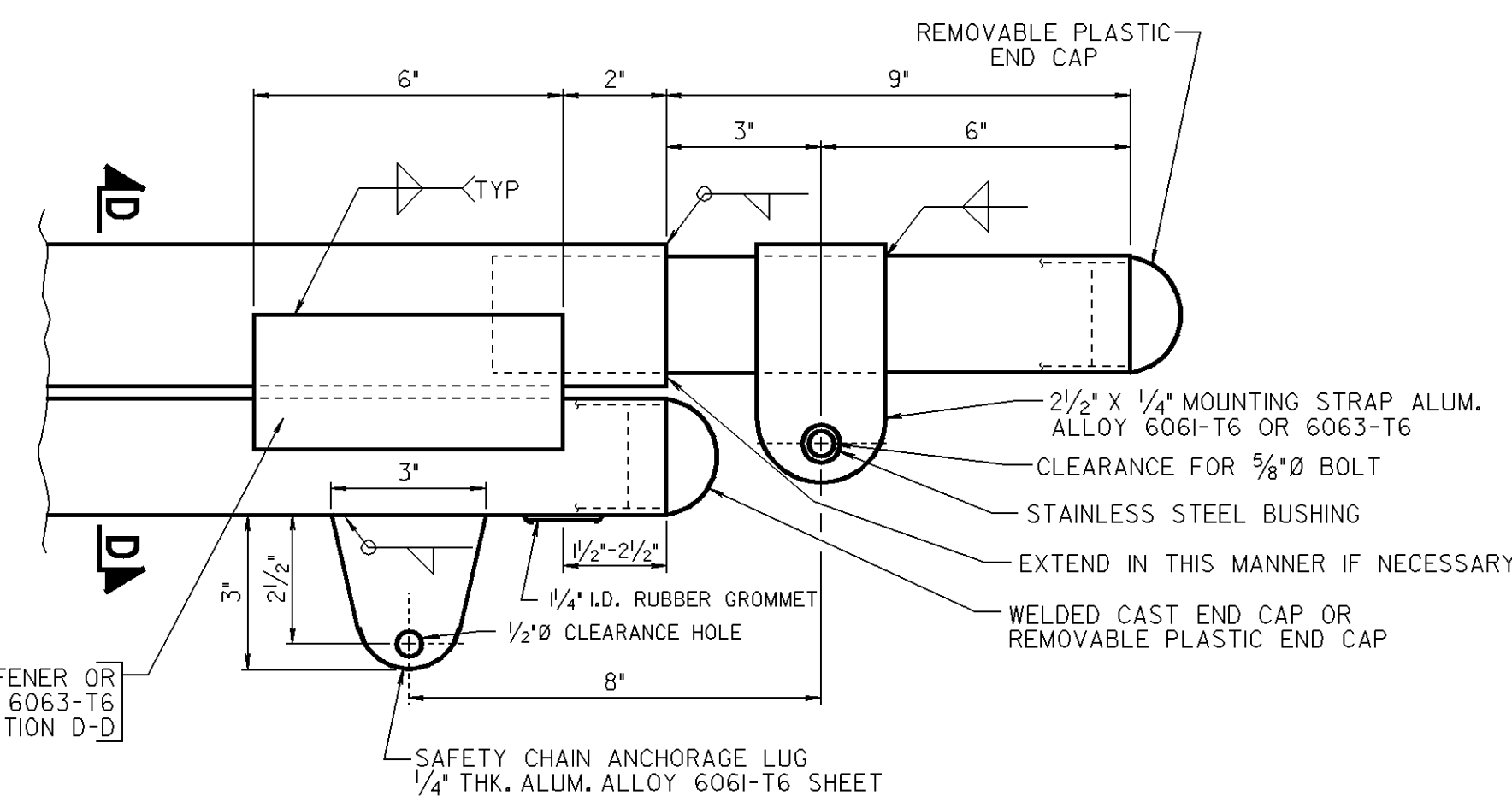
**STN. STL. BUSHING FOR
ALTERNATE MOUNTING STRAP**



TRAFFIC SIGNAL MAST ARM FOR TYPE 'T' & 'C' POLES



SECTION D-D
EXTRUSION 6061-T6 ALUM. ALLOY
2 1/4" X 1/4" X 6" ALUM. STIFFENER OR
EXTRUSION ALLOY 6061-T6 OR 6063-T6
SEE SECTION D-D

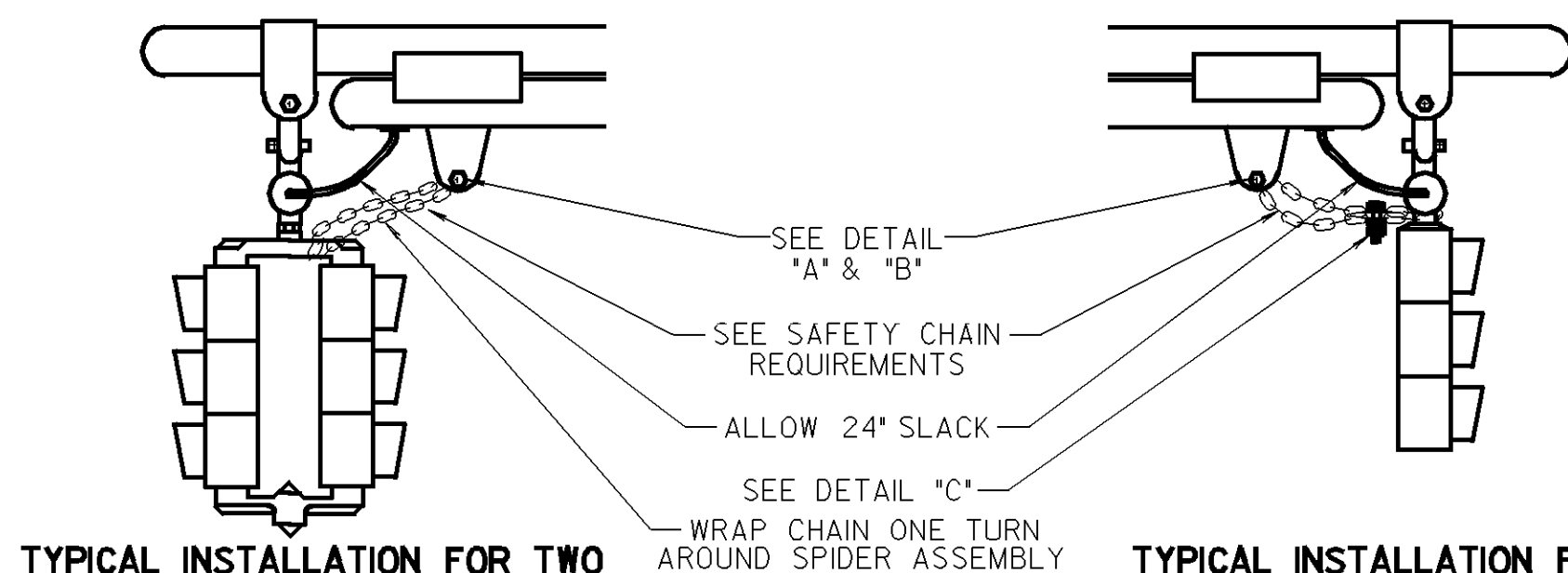


END DETAIL

NOTES

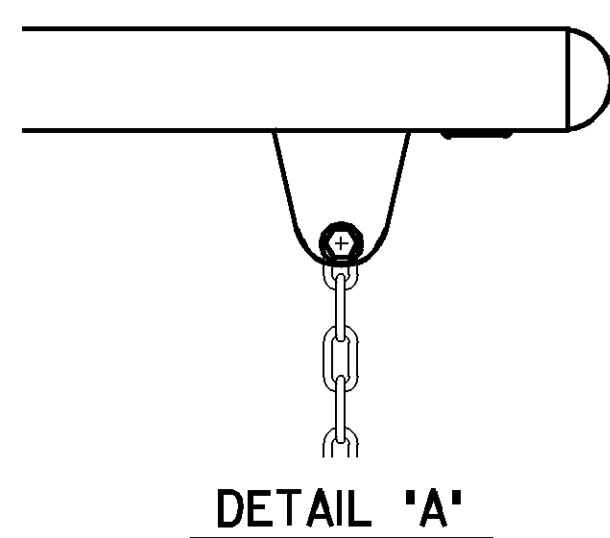
- *A* THE 25' MAST ARM SHALL BE DESIGNED TO ADEQUATELY SUPPORT 3-3 SECTION 8" OR 2-3 SECTION 12" TRAFFIC INDICATIONS AND ASSOCIATED MOUNTING HARDWARE. THE 15' AND 20' MAST ARMS SHALL SUPPORT 4-3 SECTION 12" INDICATIONS. WIND VELOCITY 80 M.P.H. - GUST FACTOR 1.3
- *B* MAST ARM WILL BE INSTALLED ON NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD ALUMINUM TRAFFIC SIGNAL POLE CONFORMING TO DRAWING NO. T-01 WITH TRANSFORMER BASE DRAWING NO. T-02.
- *C* AN EXTRUDED CLAMP MAY BE SUPPLIED AS AN ALTERNATE TO THE CAST BAND INDICATED. GENERAL CONFIGURATION MUST BE SIMILAR AND STIFFENERS MUST BE INSTALLED AS INDICATED. CLAMP MUST FIT A 6" POLE AND BOLT ARRANGEMENT MUST BE IDENTICAL. STRENGTH OF ASSEMBLED ARM MUST EQUAL OR EXCEED CAST CLAMP CONSTRUCTION. EXTRUSION ALLOY 6061-T6.
- *D* UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.
- *E* ALL STAINLESS STEEL BOLTS SHALL CONFORM TO ASTM A193 GRADE B8.
- *F* ALL TOLERANCES OF CASTINGS SHALL BE 1/32".

DIMENSION CHART - CAST & EXTRUDED CLAMP											
LETTER	A	B	C	D	E	F	G	H	I	J	K
MIN. *	9¼	7⅞	⅝	4½	-	¾	⅞ ₁₆	2⅛	3	6⅛ ₁₆	½
MAX. *	10½	8⅝ ₁₆	⅞	5	-	1⅛ ₁₆	⅞ ₁₆	3	3½ ₂	6⅛ ₁₆	½

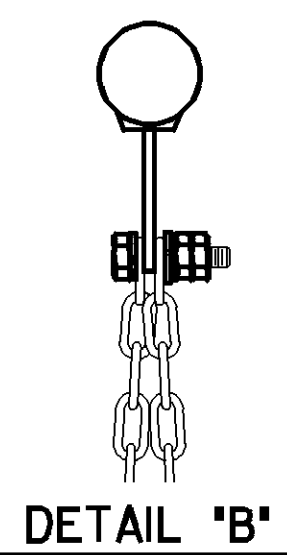


TYPICAL SAFETY CHAIN INSTALLATIONS

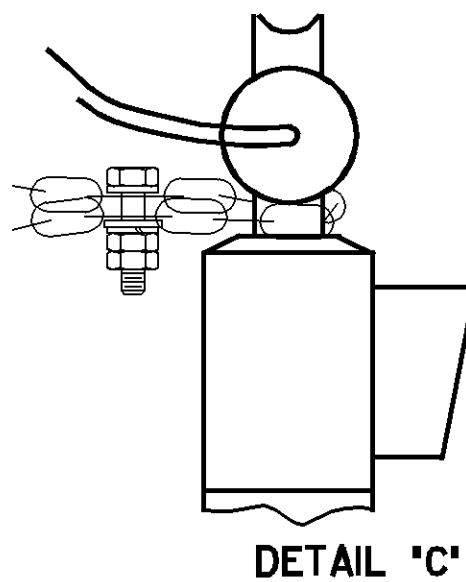
NOTE:
SAFETY CHAIN REQUIRED TO BE FURNISHED & INSTALLED
ON ALL CONTRACT INSTALLATIONS BY THE CONTRACTOR



DETAIL 'A'



DETAIL 'B'



DETAIL 'C'

**SAFETY CHAIN REQUIREMENTS FOR
TWO OR MORE TRAFFIC SIGNALS**

- FURNISH:
- 42" OF 1/4" HOT DIPPED GALVANIZED COILPROOF STRAIGHT LINK CHAIN
 - 1 - 5/8" X 2 1/2" LG. STAINLESS STEEL HEX HEAD BOLT FULLY THREADED
 - 2 - 5/8" STAINLESS STEEL HEX NUTS
 - 2 - 5/8" STAINLESS STEEL FLAT WASHERS
 - 1 - 5/8" STAINLESS STEEL LOCK WASHER

**SAFETY CHAIN REQUIREMENTS FOR
ONE TRAFFIC SIGNAL**

- FURNISH:
- 42" OF 1/4" HOT DIPPED GALVANIZED COILPROOF STRAIGHT LINK CHAIN
 - 2 - 5/8" X 2 1/2" LG. STAINLESS STEEL HEX HEAD BOLT FULLY THREADED
 - 4 - 5/8" STAINLESS STEEL HEX NUTS
 - 4 - 5/8" STAINLESS STEEL FLAT WASHERS
 - 2 - 5/8" STAINLESS STEEL LOCK WASHER

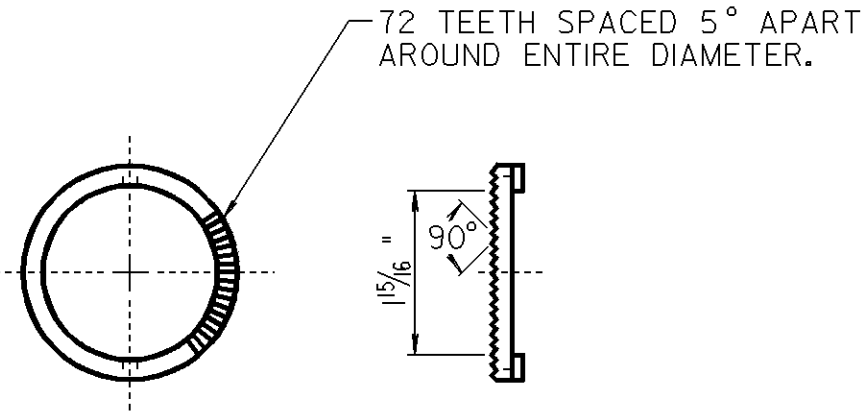
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

N.T.S.

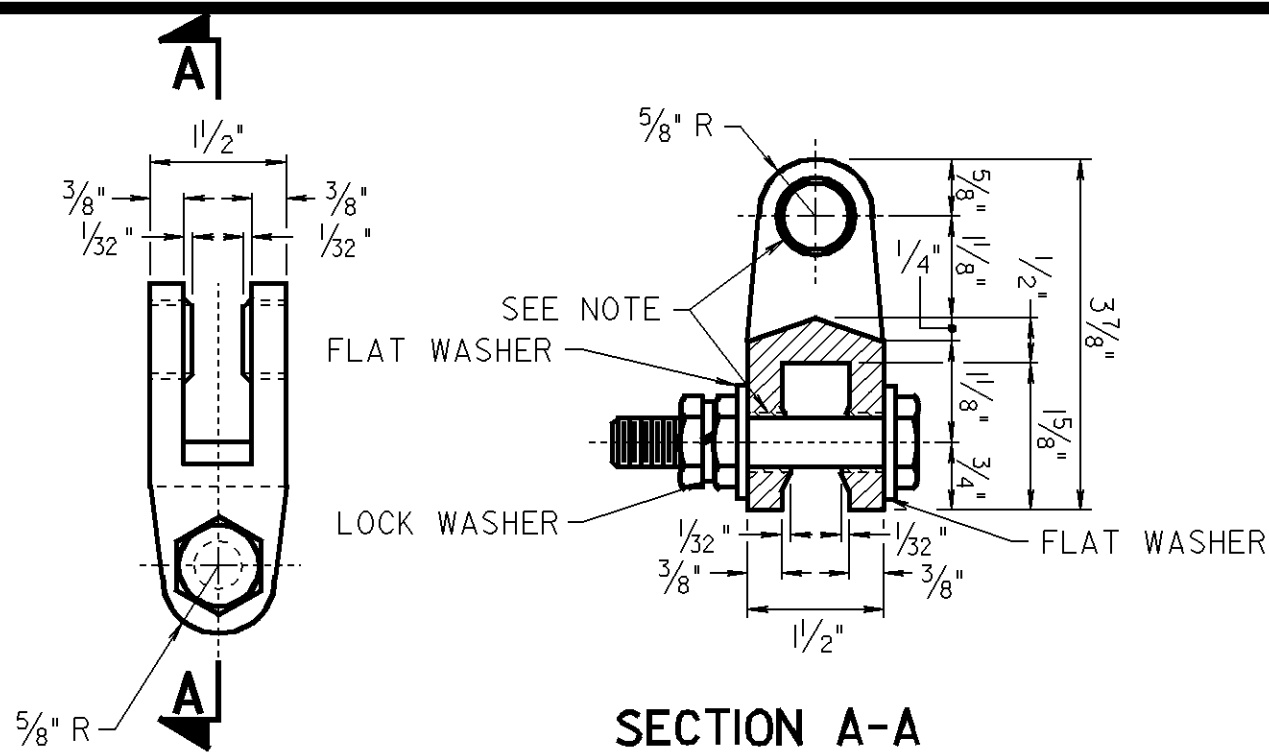
TRAFFIC SIGNAL MAST ARM 15', 20' & 25' WITH
CLAMP DETAILS FOR TYPE 'T' & 'C' STANDARDS, &
SAFETY CHAIN INSTALLATION

T-0301



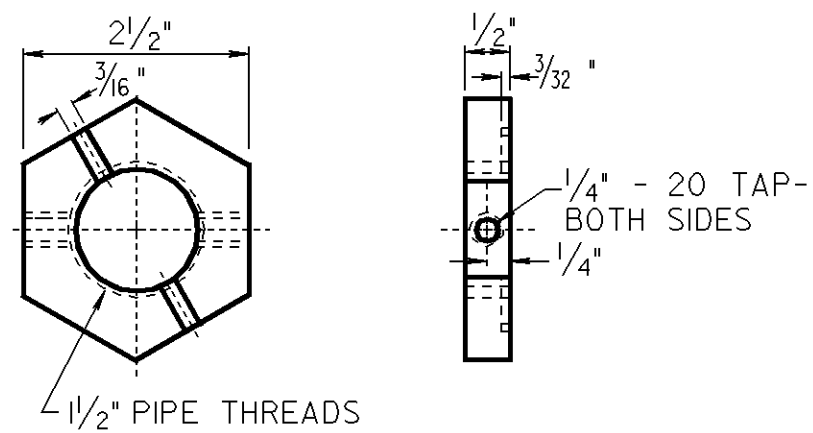
NOTE:
SERRATED POSITIONING RING
TO BE PROVIDED WHEN TRAFFIC
SIGNAL IS DIRECTLY ATTACHED TO
WIRE OUTLET FITTING.

DETAIL OF HEAD POSITIONING RING
MATERIAL: DELRIN



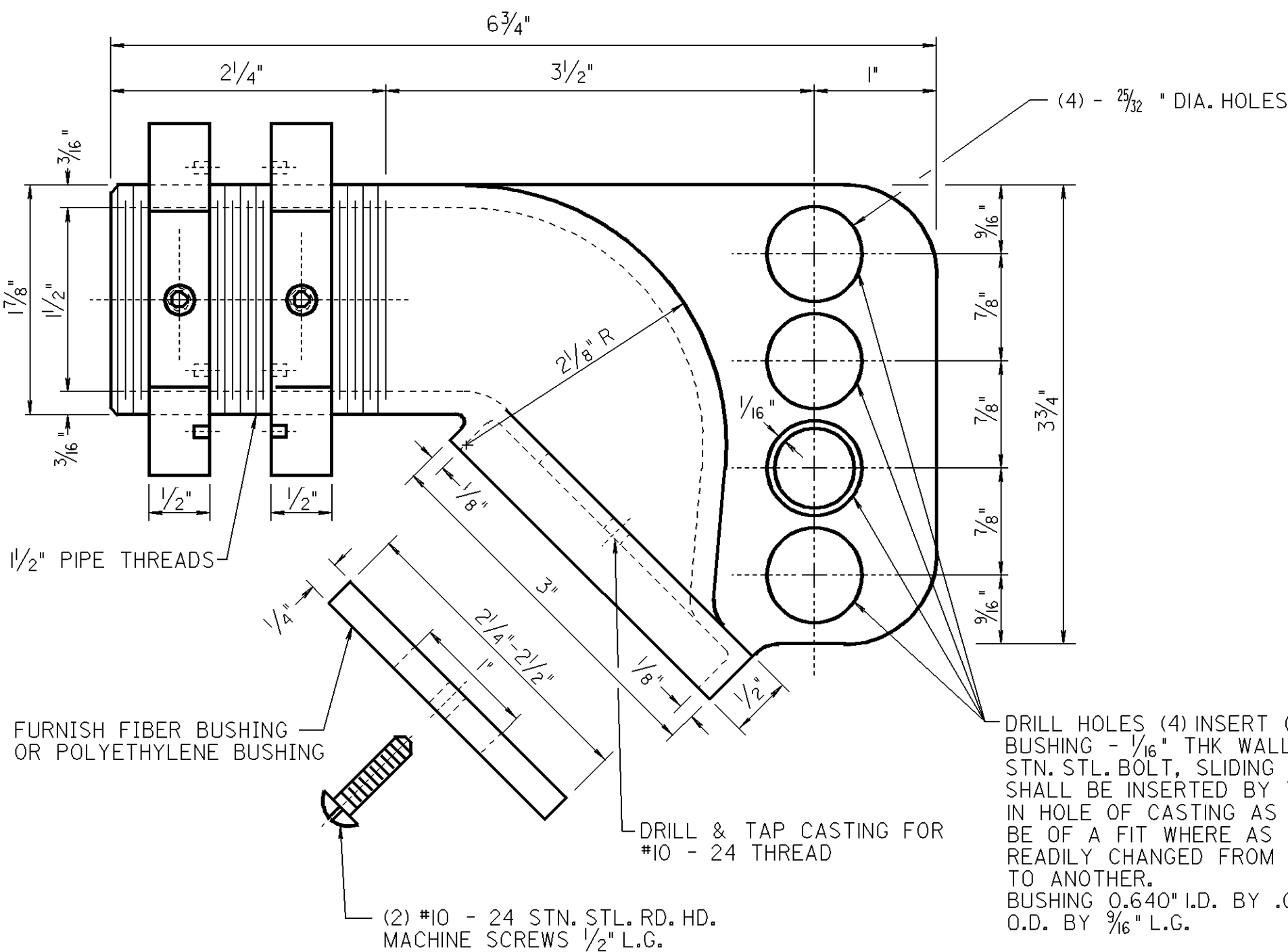
UNIVERSAL JOINT
MATERIAL - BRONZE, 85-5-5-5

NOTE:
DRILL CASTING FOR C304 STN. STL. 1/16" THK.
WALL BUSHINGS, FURNISH & PRESS FIT
INTO CASTING.
FURNISH WITH EACH UNIVERSAL JOINT:
(1) 5/8" - 11NC X 3" L.G. STN. STL. HEX BOLT
(2) 5/8" - 11NC STN. STL. HEX NUTS
(2) 5/8" Ø STN. STL. FLAT WASHER
(1) 5/8" Ø STN. STL. LOCK WASHER



HEX LOCK NUT
MATERIAL: BRONZE, 85-5-5-5

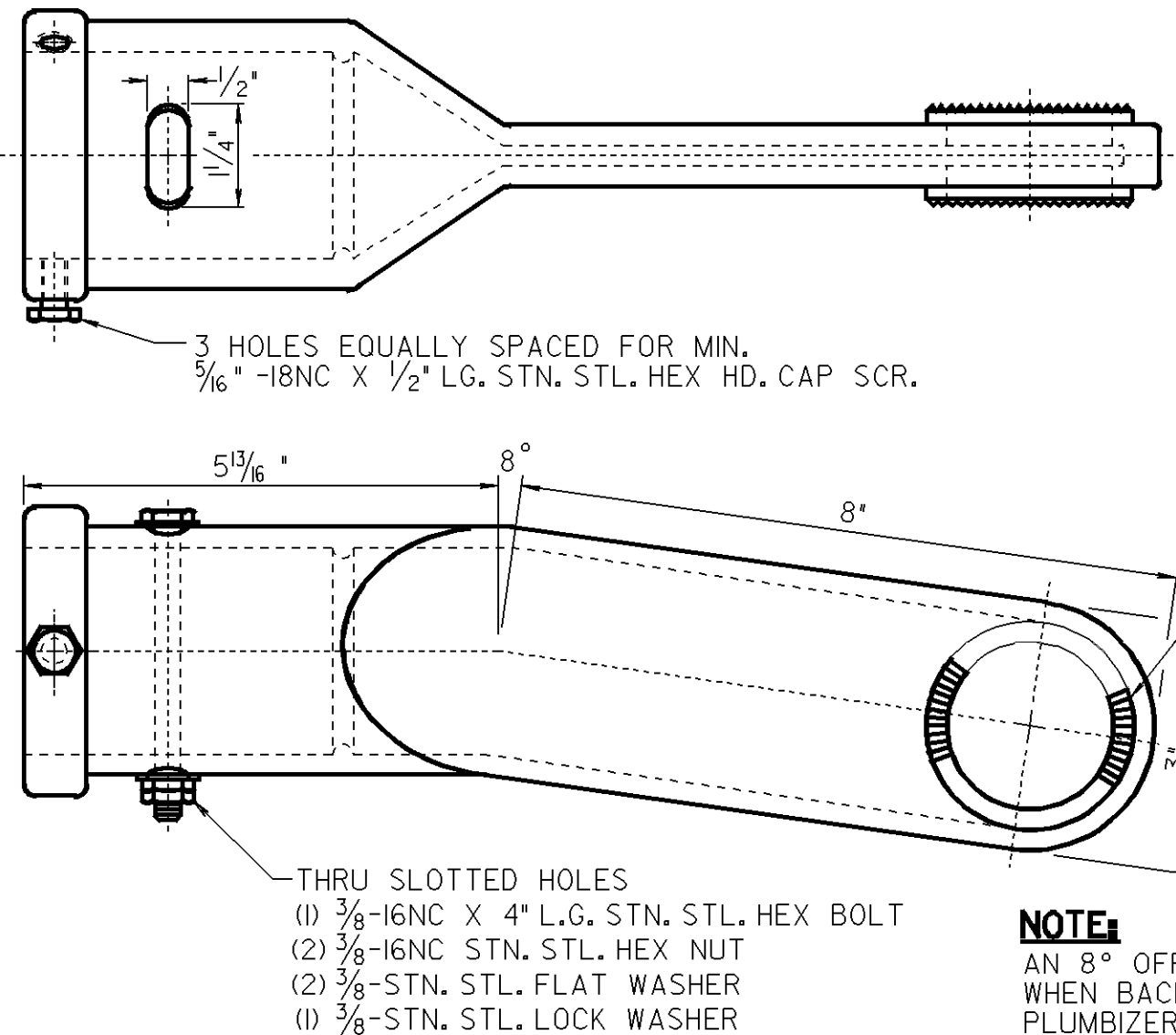
HEX LOCK NUTS - BRONZE FURNISH (2) WITH EACH
OUTLET NUTS TO BE PROVIDED WITH 5/32" DP X 3/16" WIDE
SLOT FOR SERRATED RING; DRILL & TAP 1/4" - 20 FOR
(2) STN. STL. SOC. HD. SET SCR, ONE EACH SIDE.



WIRE OUTLET
MATERIAL: BRONZE, 85-5-5-5

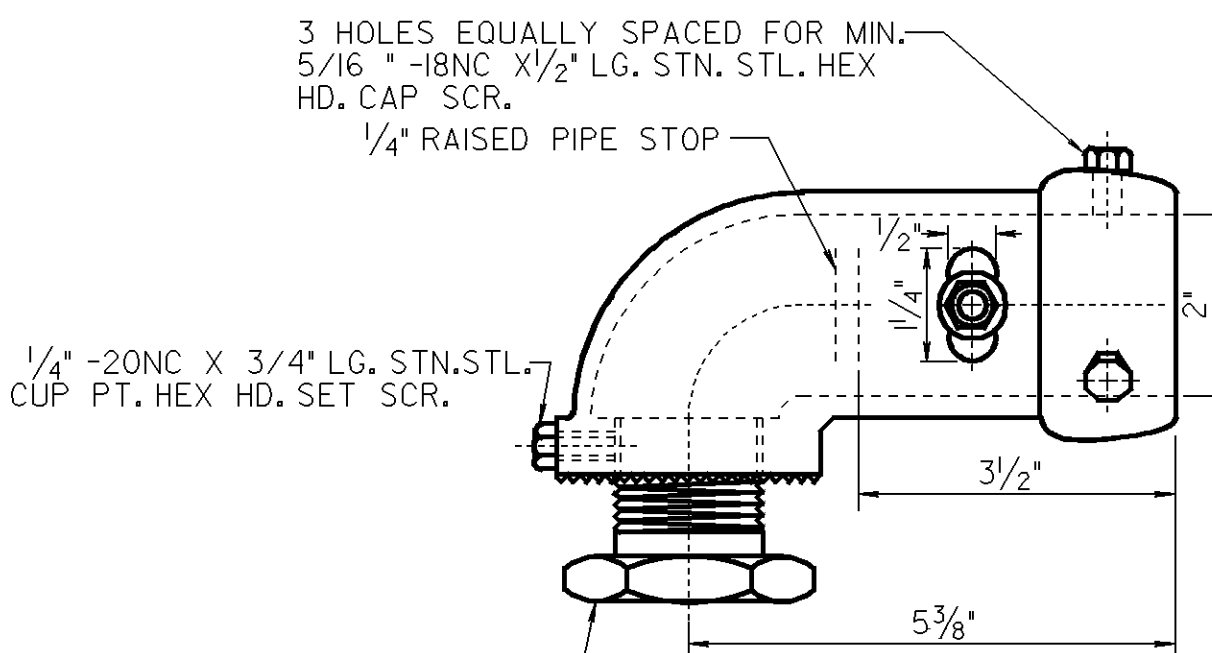
DRILL HOLES (4) INSERT (1) STN. STL.
BUSHING - 1/16" THK WALL I.D. TO TAKE 5/8" Ø
STN. STL. BOLT, SLIDING FIT. BUSHING
SHALL BE INSERTED BY THE FABRICATOR
IN HOLE OF CASTING AS SHOWN AND TO
BE OF A FIT WHERE AS BUSHING CAN BE
READILY CHANGED FROM ONE HOLE
TO ANOTHER.
BUSHING 0.640" I.D. BY .0765"
O.D. BY 5/16" L.G.

NOTE:
ON INSTALLATION THE CONTRACTOR SHALL PLACE THE
BUSHING IN THE APPROPRIATE MOUNTING HOLE AS
REQUIRED TO OBTAIN VERTICAL POSITIONING AND MAX-
IMUM VISIBILITY OF THE SIGNAL ASSEMBLY TO THE
APPROACH ROADWAY AND AS DIRECTED BY THE ENGINEER.

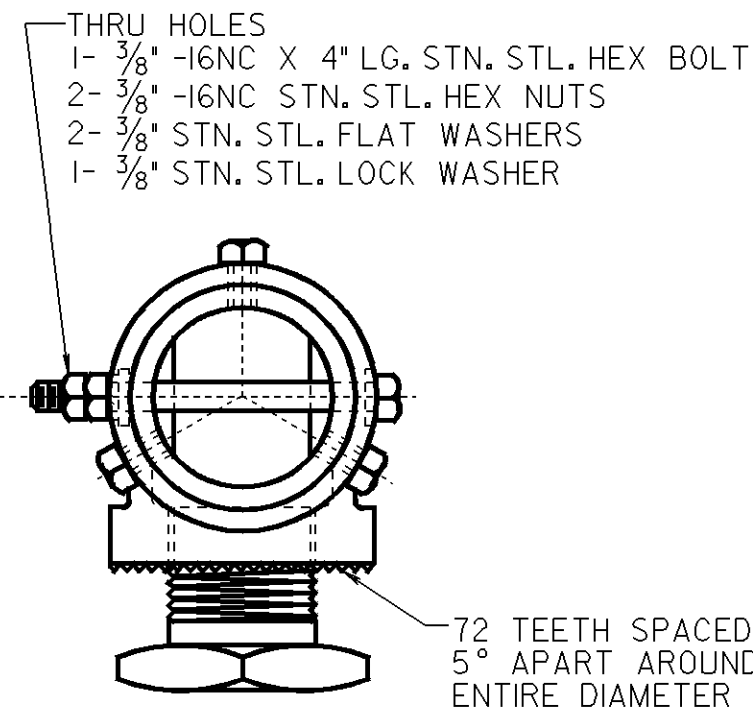


ELEVATOR PLUMBIZER
MATERIAL - ALUMINUM ALLOY 356

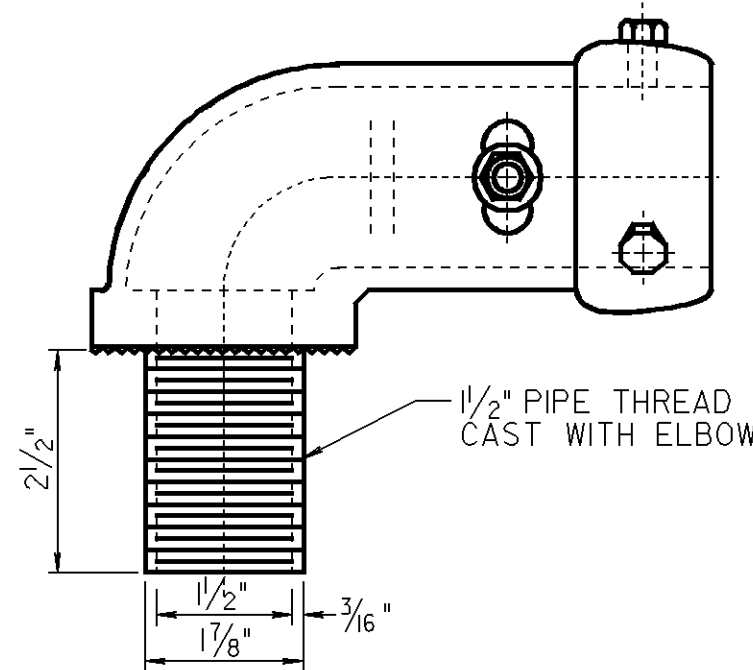
NOTE:
AN 8° OFFSET REQUIRED
WHEN BACKING PLATE IS USED.
PLUMBIZER TO FIT A 2" Ø
MAST ARM END.



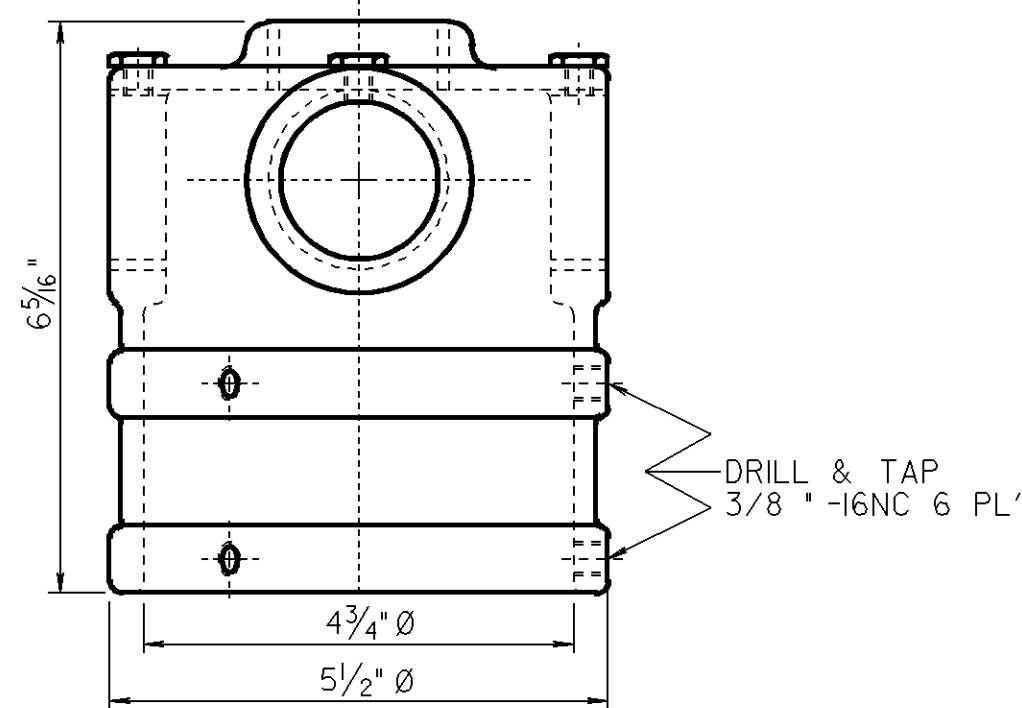
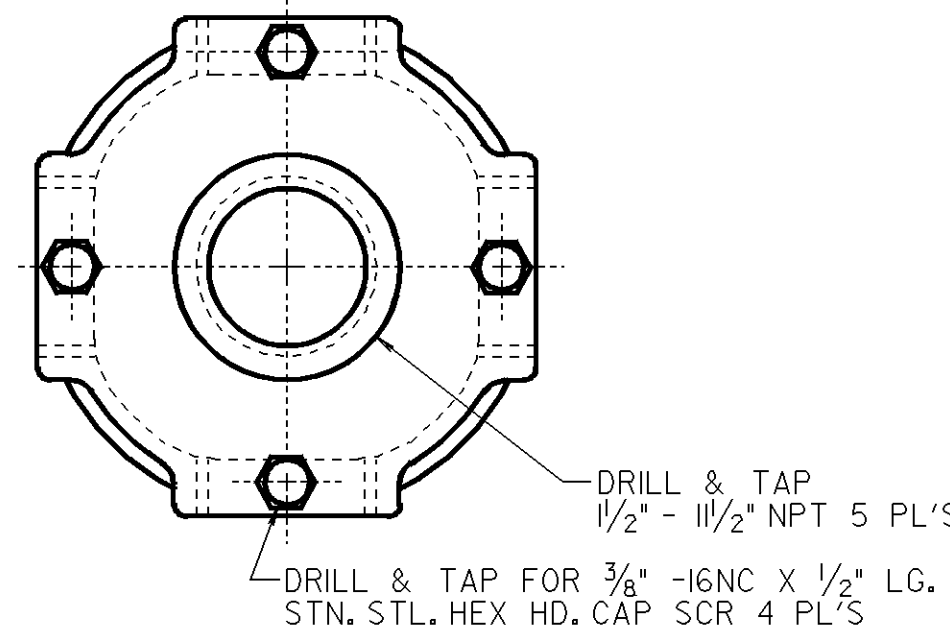
MAST ARM SLIP FITTER
MATERIAL - BRONZE, 85-5-5-5



NOTES:
1. THE SLIP FITTER SHALL BE UTILIZED
IN MOUNTING OPTICALLY PROGRAMMED
TRAFFIC SIGNALS
2. WHEN USED FOR MOUNTING SIGNALS
BACK TO BACK DRILL THRU NIPPLE AND
USE A 1" L.G. CAP SCREW.
3. SLIP FITTER TO FIT A 2" Ø MAST ARM END.



ALTERNATE MAST ARM SLIP FITTER
SAME AS ABOVE EXCEPT WHERE NOTED



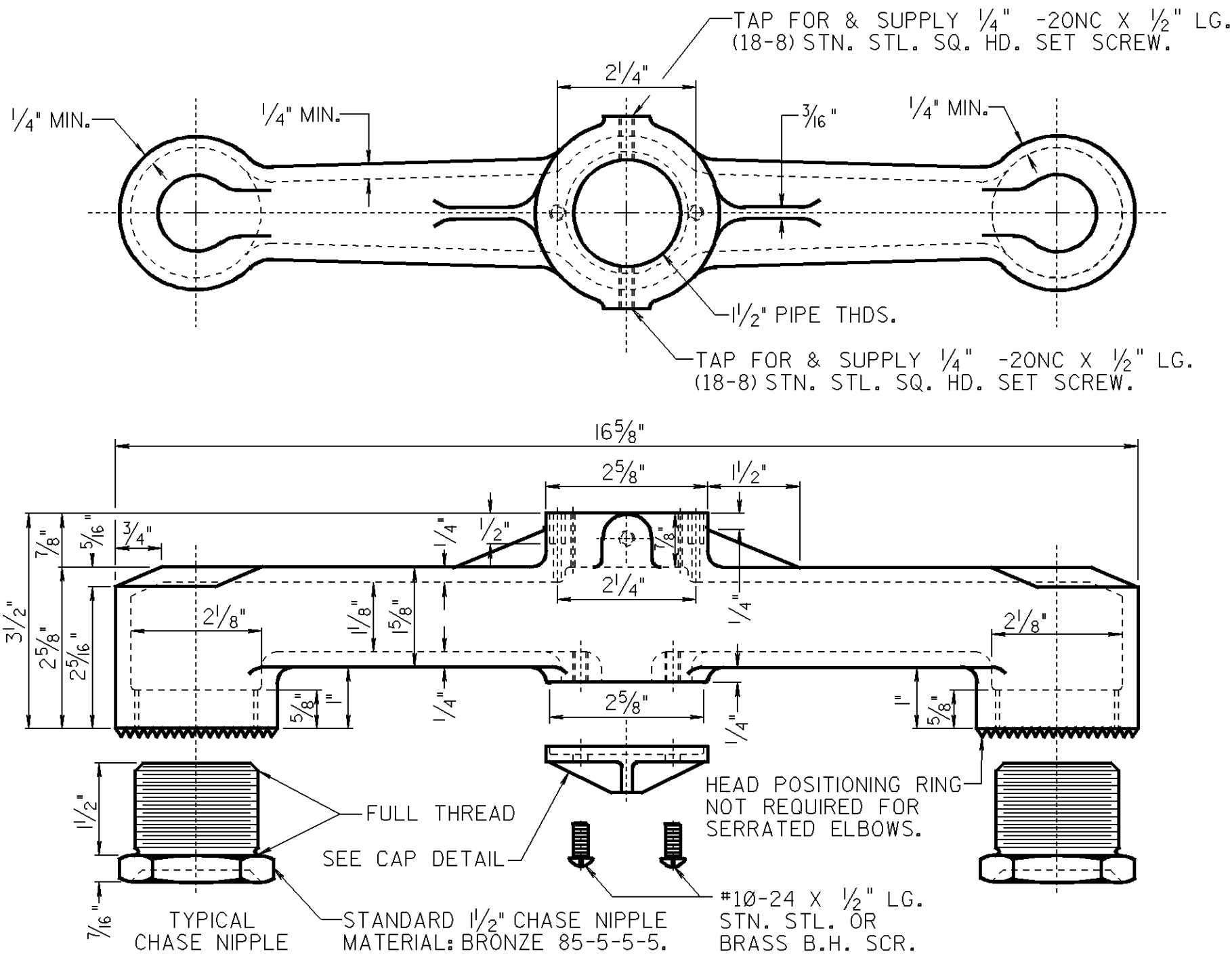
POST TOP ADAPTER
MATERIAL - ALUMINUM ALLOY 356
(FOR OPTICALLY PROGRAMMED INDICATIONS ONLY)

NOTES:
1. ALL TOLERANCES OF CASTINGS SHALL BE +1/32".
2. ALL STAINLESS STEEL BOLTS ON THIS SHEET
PER ASTM A193, GRADE B8.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

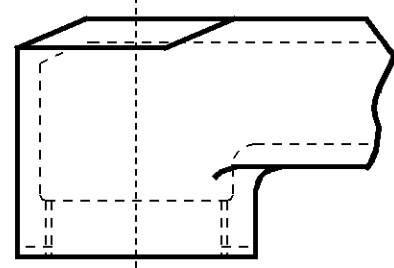
UNIVERSAL JOINT, WIRE OUTLET, MAST ARM
SLIP FITTER, POST TOP ADAPTER AND
ELEVATOR PLUMBIZER



HOLLOW SPIDER FOR 2-WAY ASSEMBLY

NOTE:

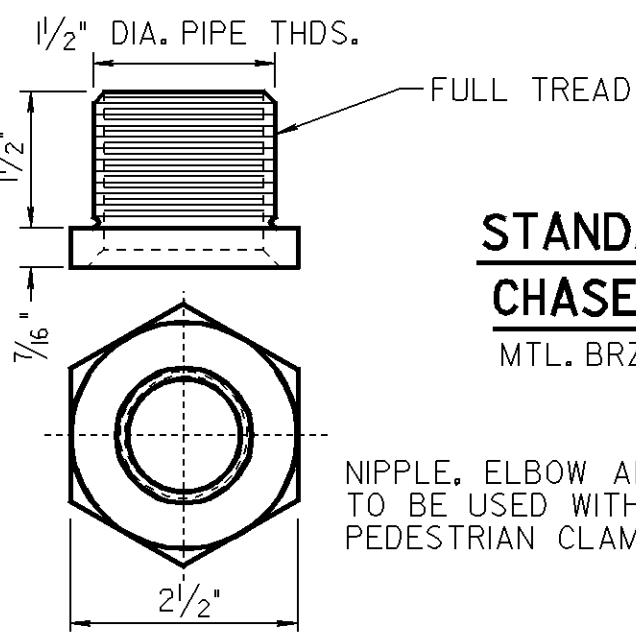
1. EACH HOLLOW SPIDER FOR 2-WAY ASSEMBLY SHALL CONSIST OF:
 - (1)-2-WAY SPIDER
 - (2)-STANDARD 1/2" CHASE NIPPLE, BRONZE 85-5-5-5
 - (1)-CAP
 - (2)-10-24 X 1/2" LG. STN. STL. OR BRASS BH. SCREWS
 - (2)-HEAD POSITIONING RINGS, IF NON-SERRATED HUBS
 - (1)-T-BAR ASSEMBLY (SEE T-BAR NOTE 2)



HEAD POSITIONING RING

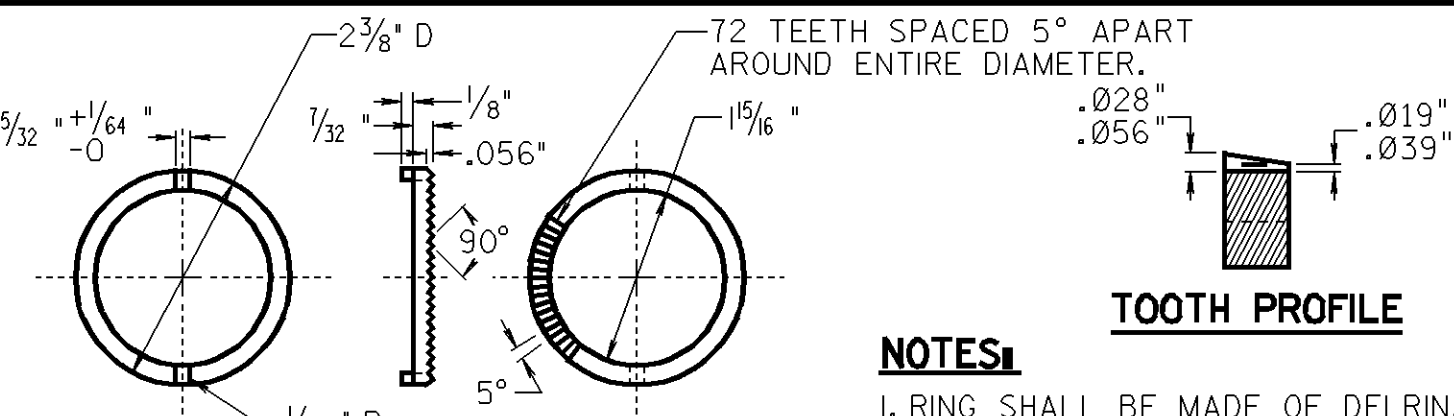


HOLLOW SPIDER HUB
NON-SERRATED HUB (TYPICAL)



STANDARD 1/2" CHASE NIPPLE

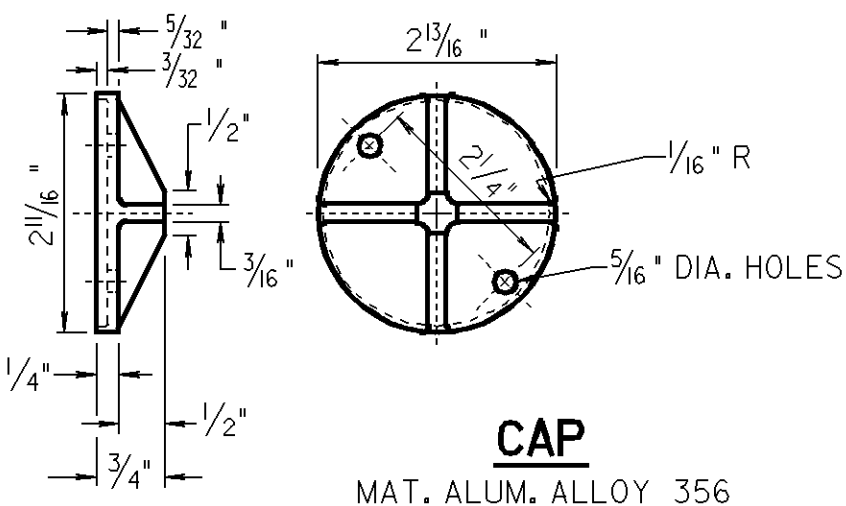
MTL. BRZ. 85-5-5-5



DETAIL OF HEAD POSITIONING RING

NOTES:

1. RING SHALL BE MADE OF DELRIN.
2. TWO (2) RINGS TO BE SUPPLIED WITH NON-SERRATED ELBOWS OF SPIDER ASSEMBLIES.

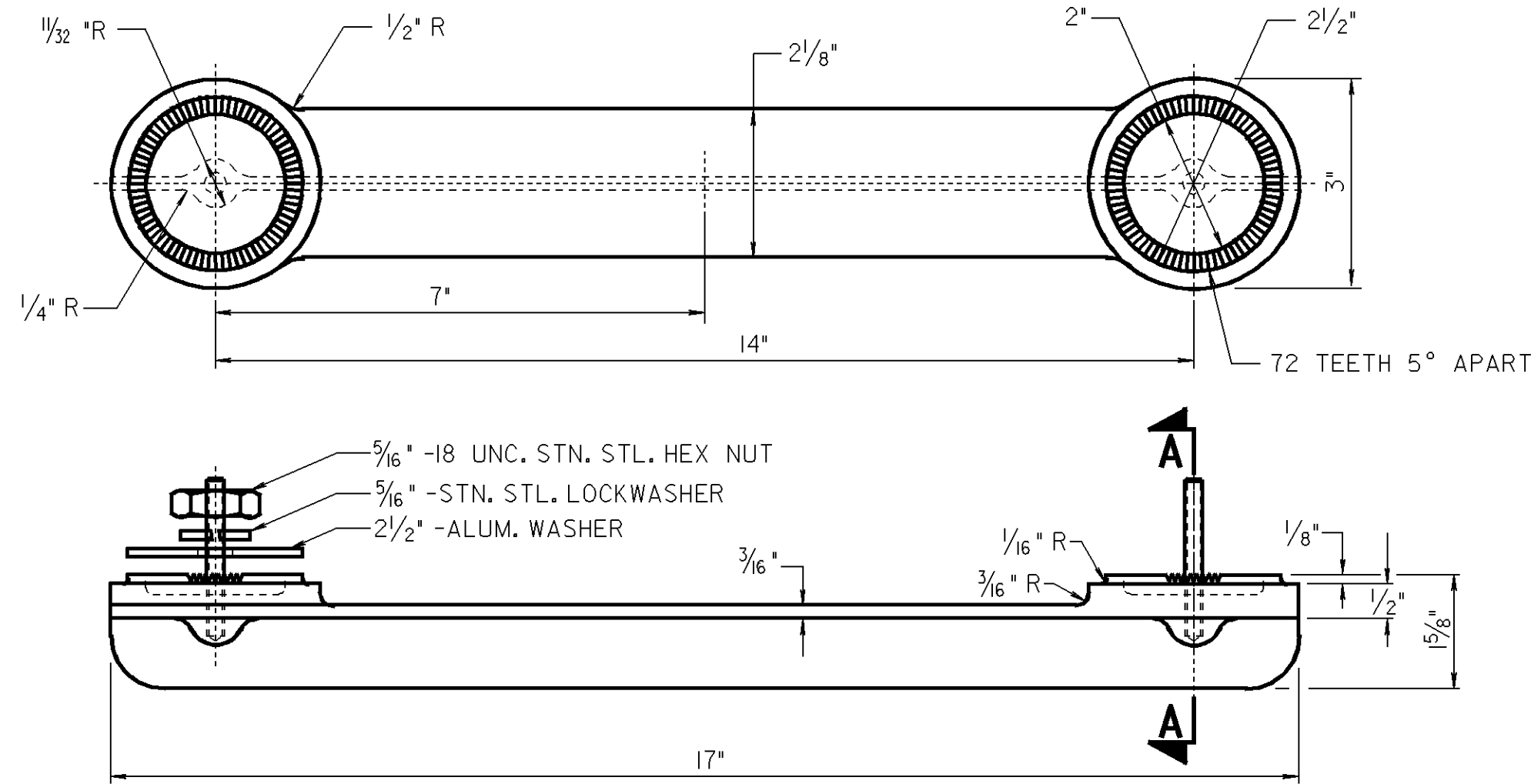


CAP

MAT. ALUM. ALLOY 356

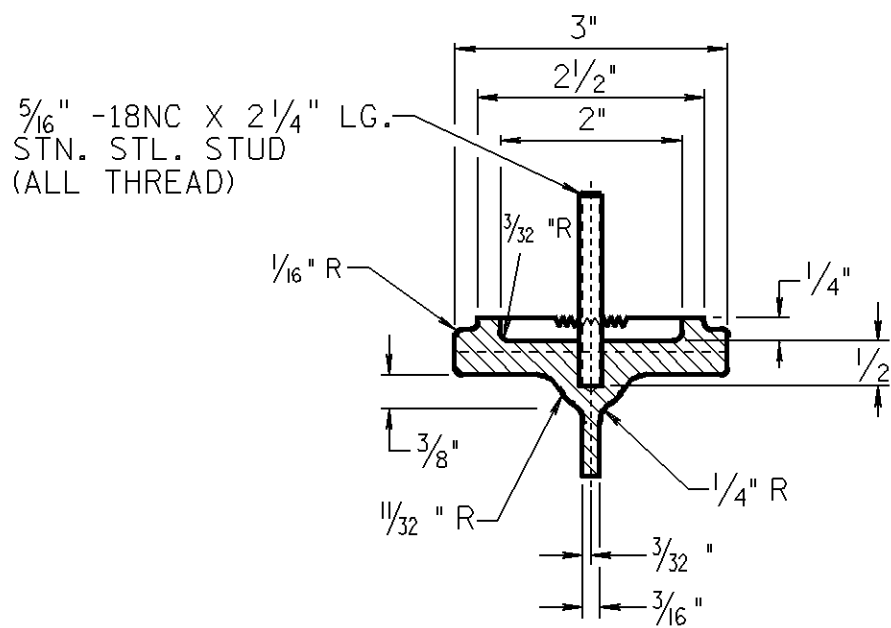
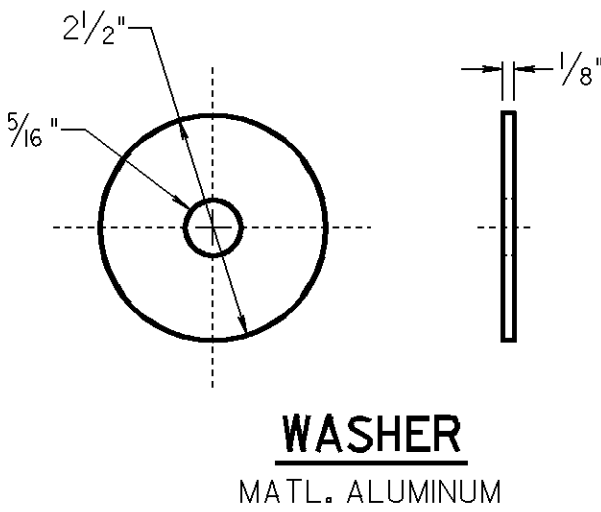
NOTES:

1. EACH T-BAR ASSEMBLY SHALL CONSIST OF:
 - (1)-T-BAR
 - (2)-WASHERS
 - (2)-5/16" DIA. STN. STL. LOCKWASHERS
 - (2)-5/16" -18NC STN. STL. HEX NUTS
2. FOR USE WITH 2-WAY HOLLOW SPIDER ASSEMBLIES WHERE SIGNAL FACES ARE SAME SIZE AND CONFIGURATION.



T-BAR

MATL. ALUM ALLOY 356



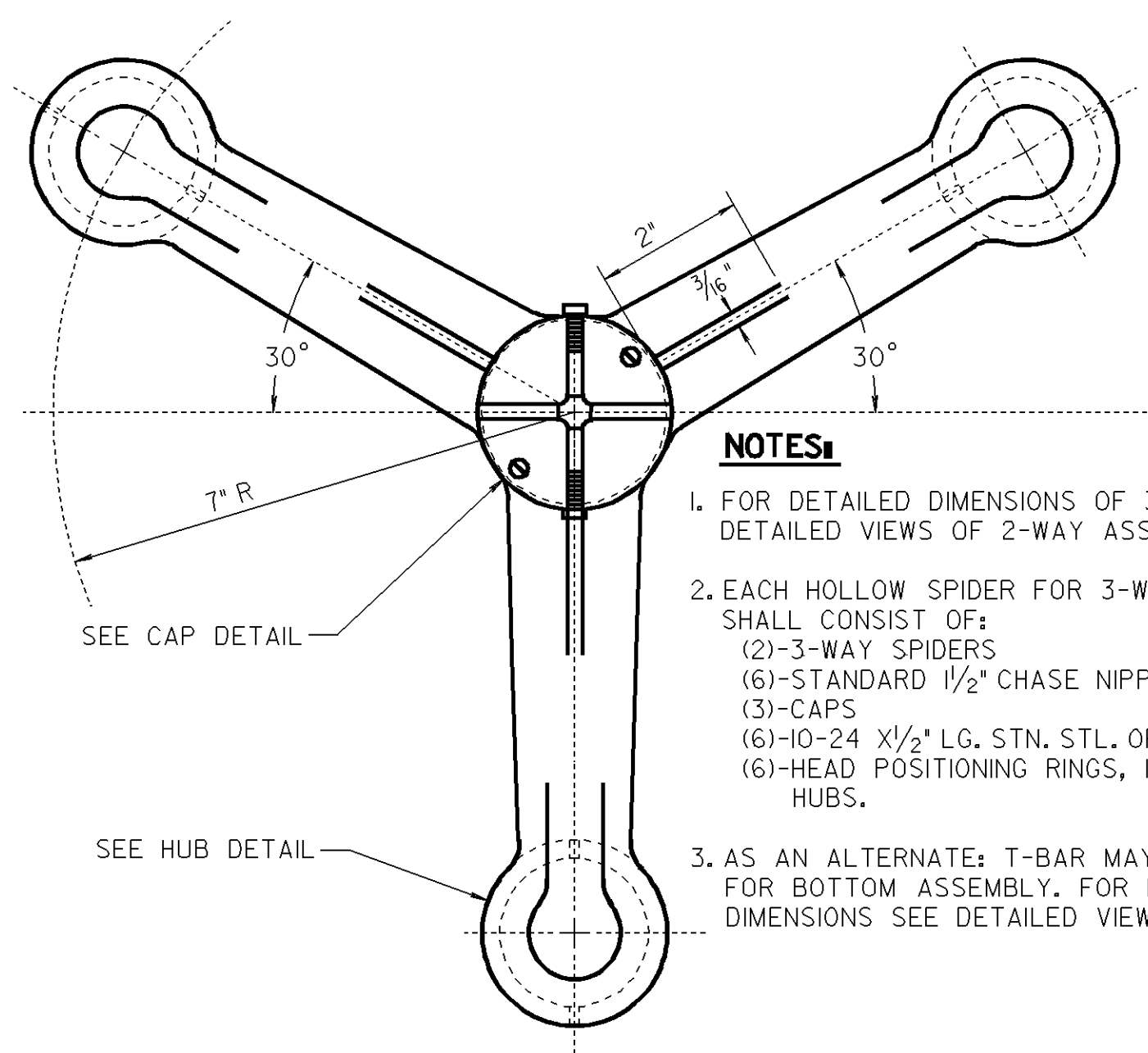
SECTION A-A

PAINT

THE SURFACE OF THE ALUMINUM CASTING MUST BE CLEANED, DEGREASED AND SHOP PAINTED WITH ONE COAT OF ZINC CHROMATE-IRON-OXIDE PAINT CONFORMING TO THE CURRENT REQUIREMENTS OF SPECIFICATION M-142 OF AASHTO. WHEN THIS PAINT HAS THOROUGHLY DRIED, IT SHALL THEN BE SHOP PAINTED WITH A COAT OF YELLOW ENAMEL PAINT READY MIXED CONFORMING TO THE REQUIREMENTS OF FEDERAL SPECIFICATIONS 595A FOR ENAMEL; GLOSS, SYNTHETIC (FOR EXTERIOR AND INTERIOR SURFACES) CLASS A, AIR DRYING THE TINT OF WHICH SHALL MATCH GLOSS-YELLOW STANDARD COLOR NO. 13538, AS SHOWN IN THE FEDERAL SPECIFICATION 595A COLOR; (FOR READY MIXED PAINT).

NOTES:

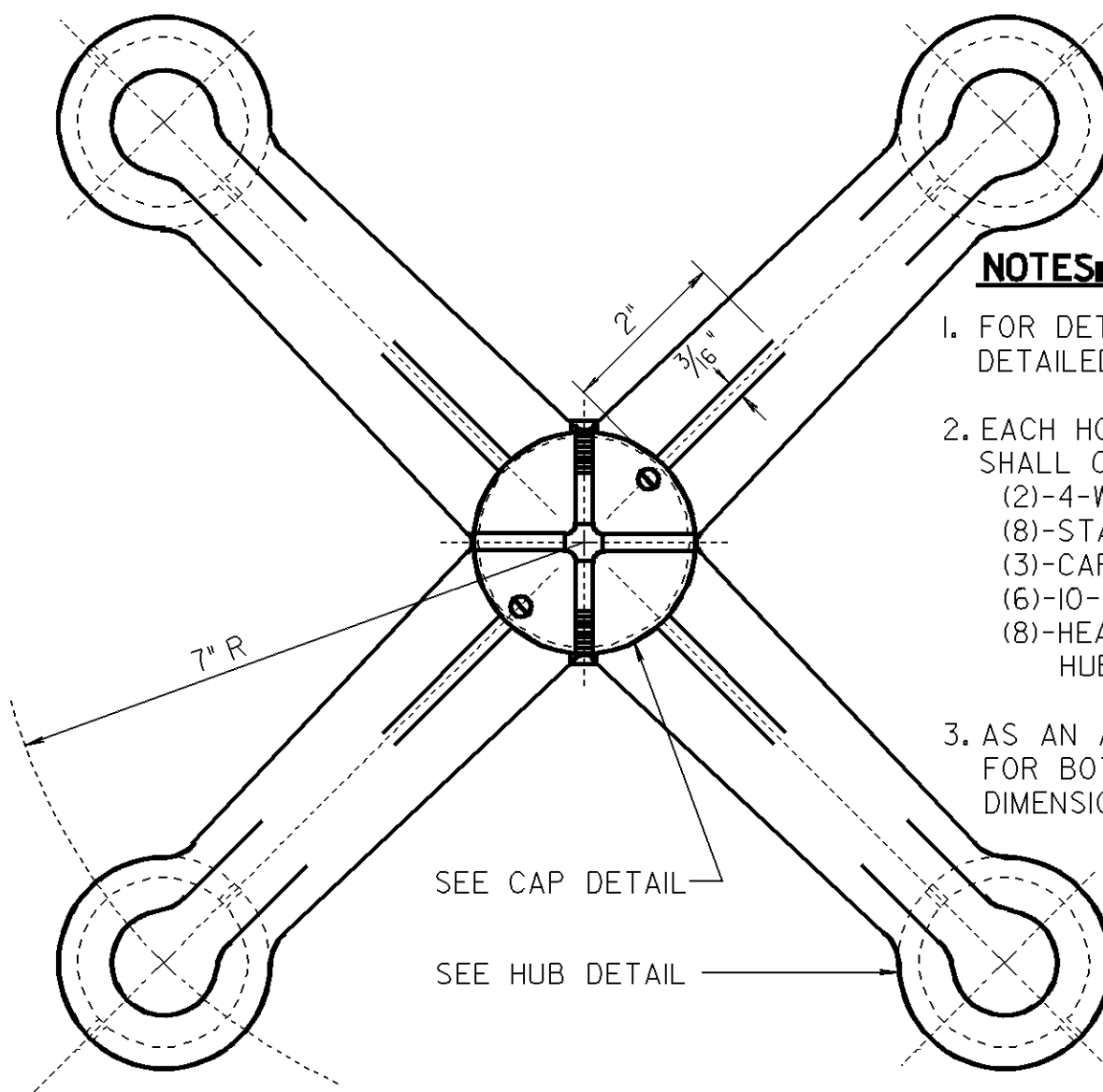
1. UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMUNAIRES AND TRAFFIC SIGNALS.
2. ALL TOLERANCES OF CASTINGS SHALL BE $\pm 1/32"$.
3. ALL STAINLESS STEEL BOLTS ON THIS SHEET PER ASTM A193 GRADE B8.



NOTES:

1. FOR DETAILED DIMENSIONS OF 3-WAY SPIDER SEE DETAILED VIEWS OF 2-WAY ASSEMBLY.
2. EACH HOLLOW SPIDER FOR 3-WAY ASSEMBLY SHALL CONSIST OF:
 - (2)-3-WAY SPIDERS
 - (6)-STANDARD 1/2" CHASE NIPPLES, BRONZE 85-5-5-5
 - (3)-CAPS
 - (6)-10-24 X 1/2" LG. STN. STL. OR BRASS BH. SCREWS
 - (6)-HEAD POSITIONING RINGS, IF NON-SERRATED HUBS.
3. AS AN ALTERNATE: T-BAR MAY BE UTILIZED FOR BOTTOM ASSEMBLY. FOR DETAILED DIMENSIONS SEE DETAILED VIEWS OF T-BAR.

HOLLOW SPIDER FOR 3-WAY ASSEMBLY



NOTES:

1. FOR DETAILED DIMENSIONS OF 4-WAY SPIDER SEE DETAILED VIEWS OF 2-WAY ASSEMBLY.
2. EACH HOLLOW SPIDER FOR 4-WAY ASSEMBLY SHALL CONSIST OF:
 - (2)-4-WAY SPIDERS
 - (8)-STANDARD 1/2" CHASE NIPPLES, BRONZE 85-5-5-5
 - (3)-CAPS
 - (6)-10-24 X 1/2" LG. STN. STL. OR BRASS BH. SCREWS
 - (8)-HEAD POSITIONING RINGS, IF NON-SERRATED HUBS.
3. AS AN ALTERNATE: T-BAR MAY BE UTILIZED FOR BOTTOM ASSEMBLY. FOR DETAILED DIMENSIONS SEE DETAILED VIEWS OF T-BAR.

HOLLOW SPIDER FOR 4-WAY ASSEMBLY

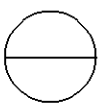
NEW JERSEY DEPARTMENT OF TRANSPORTATION

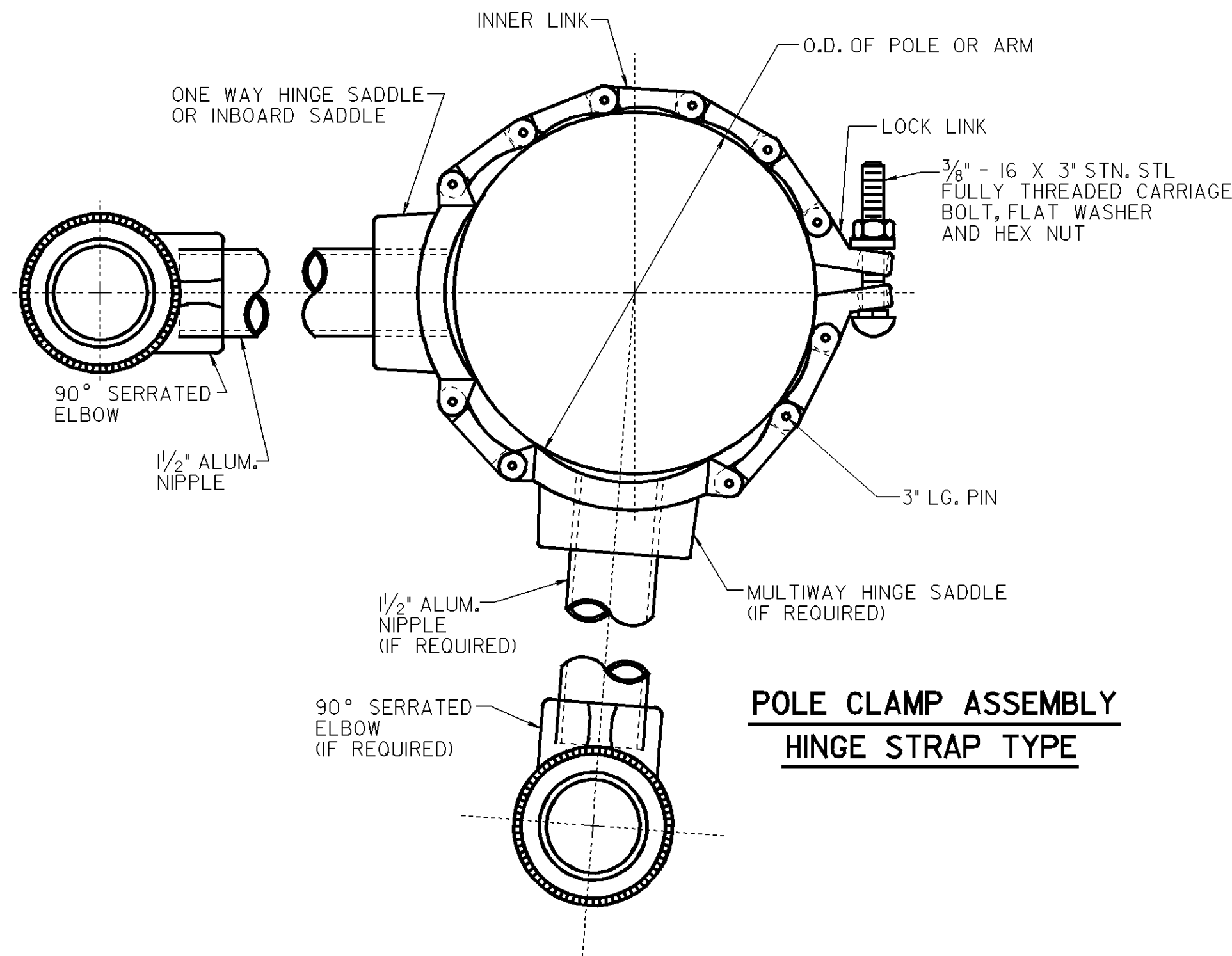
ELECTRICAL DETAILS

N.T.S.

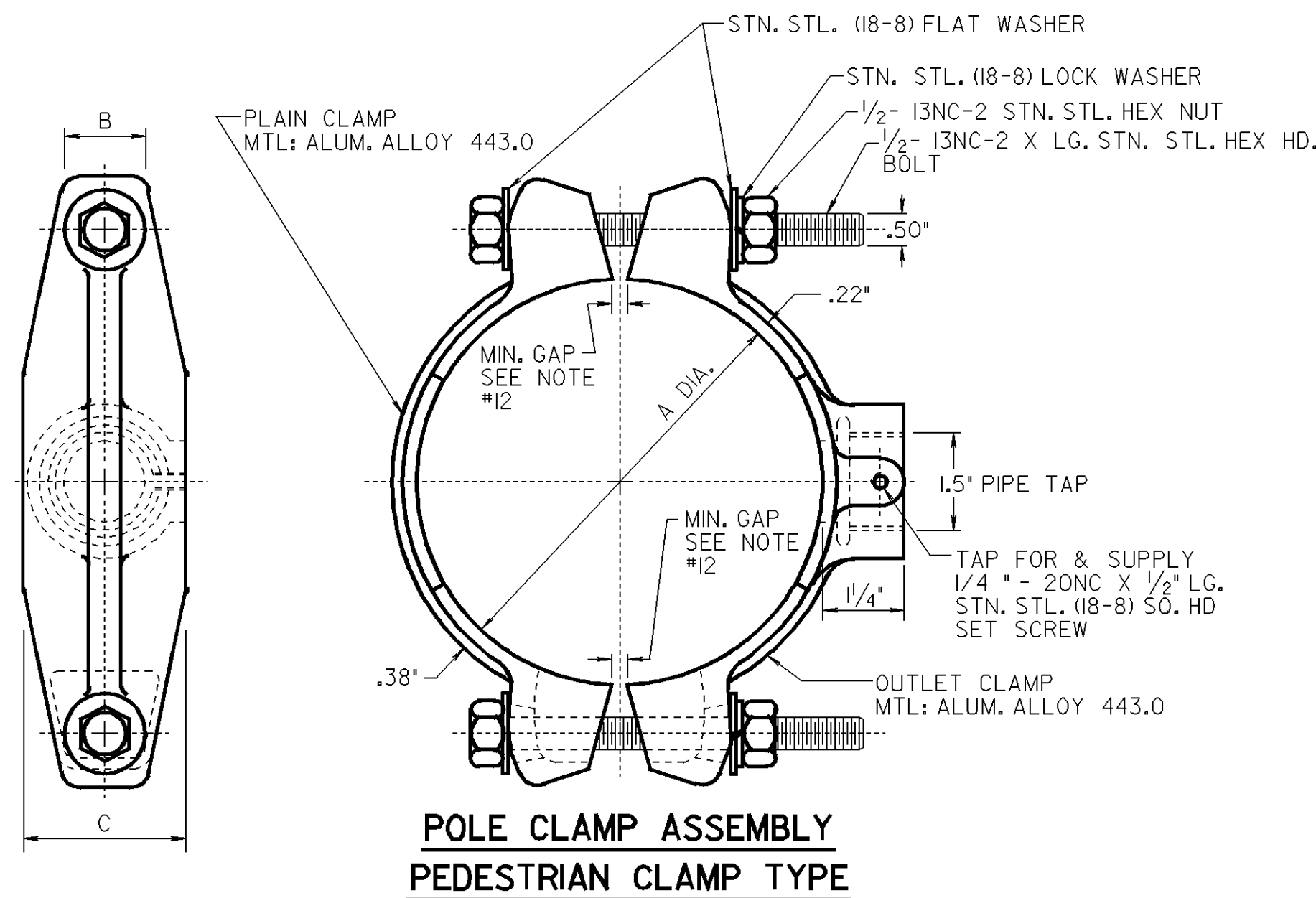
DETAILS OF SIGNAL ASSEMBLY
SPIDER AND T-BAR

T-050I

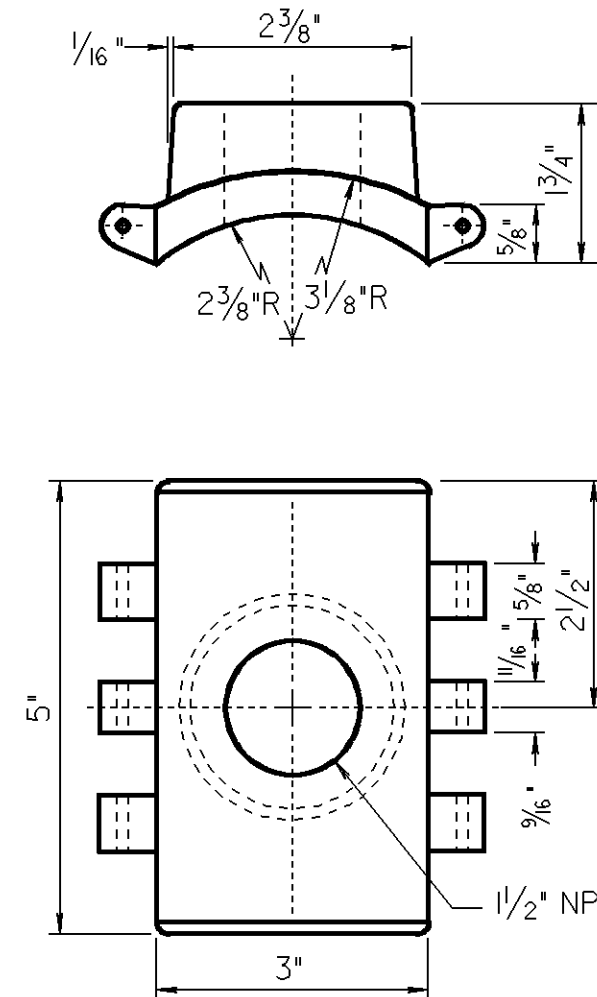




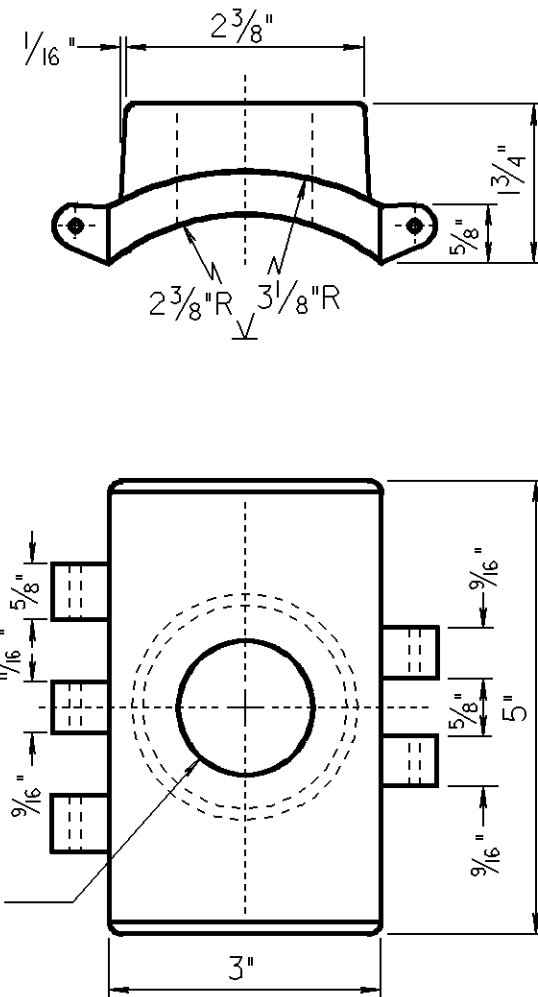
**POLE CLAMP ASSEMBLY
HINGE STRAP TYPE**



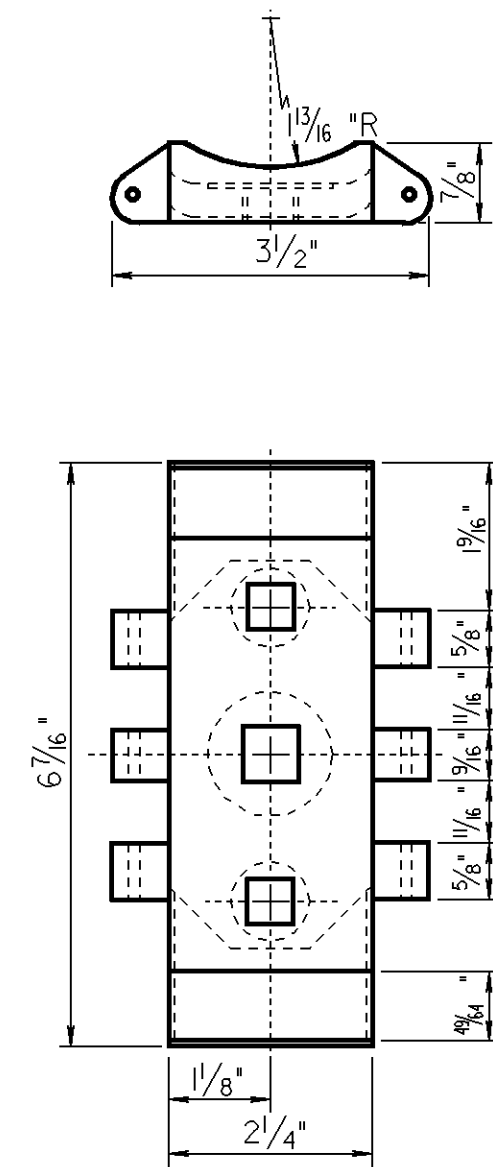
**POLE CLAMP ASSEMBLY
PEDESTRIAN CLAMP TYPE**



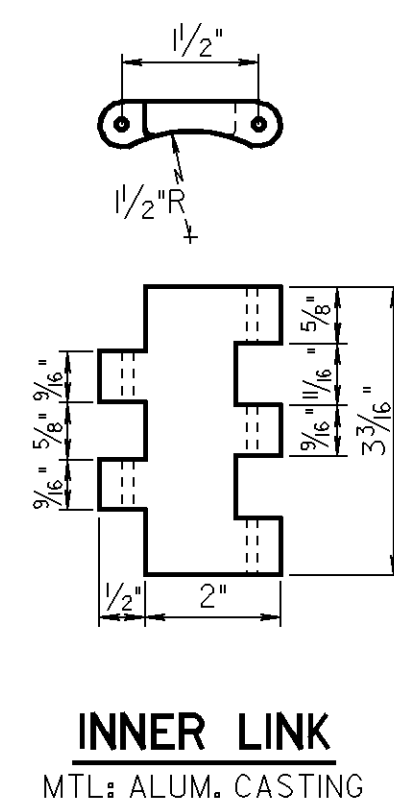
ONE-WAY HINGE SADDLE
MTL: ALUM. CASTING



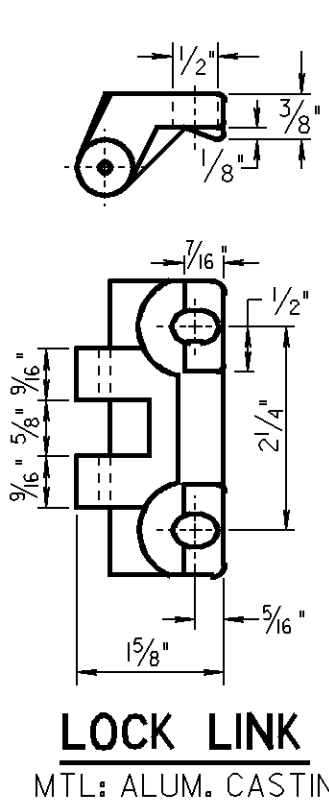
MULTI-WAY HINGE SADDLE
MTL: ALUM. CASTING



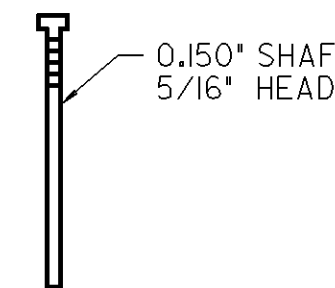
INBOARD SADDLE
MTL: ALUM. CASTING



INNER LINK
MTL: ALUM. CASTING



LOCK LINK
MTL: ALUM. CASTING



3\"/>

NOTE:

ALL HINGE STRAPS INNER LINK AND LOCK LINK PARTS SHALL BE TUMBLED FOR 18 HOURS MINIMUM USING 3/4\"/>

HINGE STRAP LIST OF MATERIALS		
DESCRIPTION	MATERIAL	NO. REQ'D
HINGE SADDLE	B26-82 CAST ALUM.	2
INNER LINK	B26-82 CAST ALUM.	23*(32)
LOCK LINK	B26-82 CAST ALUM.	4
STD. 1/2\"/>	ALUM. ALLOY	2
90° SERRATED ELBOW	ALUM. ALLOY 443.0	2
3\"/>	ALUM. ALLOY 443.0	30*(38)
BOLT 3/8\"/>	STN. STL.	4
FLAT WASHER	STN. STL.	4
LOCK WASHER	STN. STL.	4
NUT, HEX 3/8\"/>	STN. STL.	4
MULTI-WAY HINGE SADDLE	CAST ALUM.	AS REQ'D
INBOARD SADDLE	CAST ALUM.	AS REQ'D
1/2\"/>	BRZ. 85-5-5-5	2

*() NUMBER REQUIRED WHEN INSTALLED ON *K* POLE

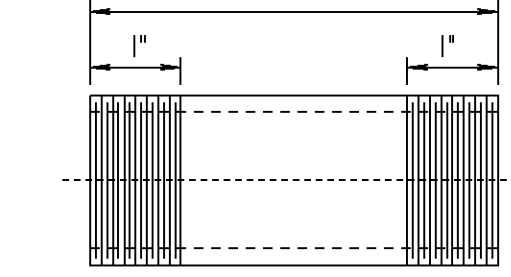
PEDESTRIAN CLAMP LIST OF MATERIALS		
DESCRIPTION	MATERIAL	NO. REQ'D.
PLAIN CLAMP	ALUM. ALLOY 443.0	2
OUTLET CLAMP	ALUM. ALLOY 443.0	2
BOLT, HEX HD. 1/2\"/>	STN. STL.	4
LOCK WASHER 1/2\"/>	STN. STL.	4
FLAT WASHER 1/2\"/>	STN. STL.	8
HEX NUT 1/2\"/>	STN. STL.	4
SET SCREW, SQ. HD. 1/4\"/>	STN. STL.	2
1/2\"/>	BRZ. 85-5-5-5	2
90° SERRATED ELBOW	ALUM. ALLOY 443.0	2
STD. 1/2\"/>	ALUM. 6061-T6	2

NOTE:

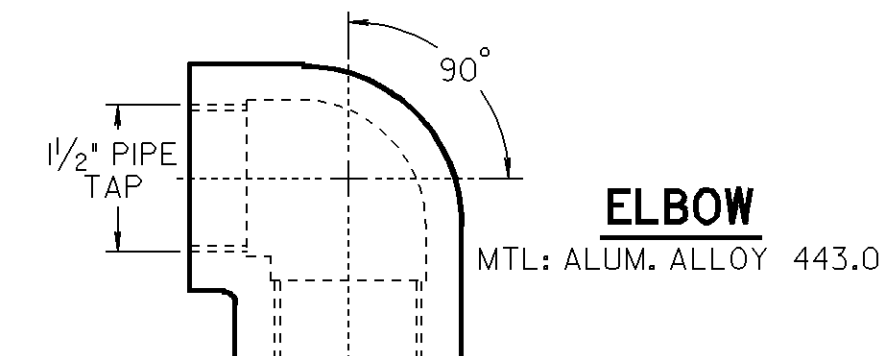
HARDWARE SHALL BE TIGHTENED AS PER TORQUE RATING AS RECOMMENDED BY THE MANUFACTURER.

PEDESTRIAN CLAMP DIMENSIONS			
A	B	C	BOLT LGTH.
6"-8"	1.25"	2.5"	6.0"
8"-10"	1.25"	2.5"	7.5"
10"-12"	1.50"	2.875"	9.0"

6", 12", OR 16" AS REQ'D
TRAFFIC SIG. HEAD INSTAL.

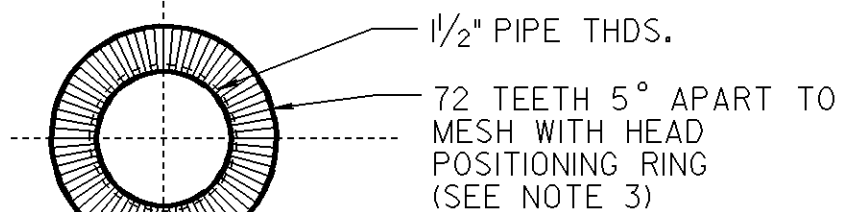


STD. 1/2\"/>



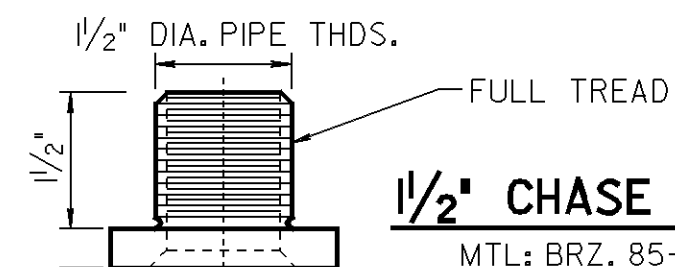
ELBOW

MTL: ALUM. ALLOY 443.0



1/2" PIPE THDS.

72 TEETH 5° APART TO
MESH WITH HEAD
POSITIONING RING
(SEE NOTE 3)



1/2\"/>

MTL: BRZ. 85-5-5-5

NIPPLE, ELBOW AND/OR CHASE NIPPLE
TO BE USED WITH HINGE STRAP OR
PEDESTRIAN CLAMP AS REQUIRED.

NOTES:

1. PEDESTRIAN CLAMP TYPE CAST ALUMINUM, CLAMP SHOWN MUST MEET THE FOLLOWING TESTS: 6" DIA. CLAMP TEST.

COMPLETE CLAMP SHALL BE SET ON 6" DIA. POLE.
COMPLETE CLAMP WITH 6.5" DIA. SET SHALL BE SET ON 8" DIA. POLE.
COMPLETE CLAMP AFTER BEING SET FROM 8" DIA. POLE SHALL BE
RESET ON 6" DIA. POLE.

CLAMPS SHALL NOT SHOW ANY FRACTURES AFTER THE SETTING AND
RESETTING PROCEDURE.

THIS TEST TO BE CONDUCTED IN THE PRESENCE OF A REPRESENTATIVE
OF THE NEW JERSEY DEPARTMENT OF TRANSPORTATION.
MANUFACTURER SHALL ALSO SUBMIT DRAWING OF CLAMP TO BE
FURNISHED FOR APPROVAL OF THE NEW JERSEY DEPARTMENT
OF TRANSPORTATION.

2. CAST ALUM. CLAMPS OF LARGER DIA. WILL BE TESTED IN A SIMILAR MANNER.

3. PROVIDE SLOTS OR SERRATIONS IN FACE OF ELBOW OR SLOTS & SERRATED POSITIONING
RING. SLOTS TO BE 1/32" DP X 3/16" W. SERRATIONS TO MATCH HOUSING AND ALLOW 5°
ADJUSTMENT.

4. UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD
SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS,
LUMINAIRES AND TRAFFIC SIGNALS.

5. INSTALL 1/4" I.D. RUBBER GROMMET IN TRAFFIC SIGNAL STANDARD.

6. ALL STN. STL. BOLTS PER ASTM A193 GRADE B8 OR ASTM F593 ALLOY 304.

7. ALL ALUM. SAND CASTINGS SHALL BE ASTM B26 ALLOY.

8. ALL ALUM. NIPPLES SHALL BE 6061-T6, ASTM B-241 ALLOY; MIL. SPEC.
00A 200/80F.

9. HINGE STRAP IS ADAPTABLE TO ANY POLE DIA. BY ADDING OR
REMOVING INNER LINKS.

10. HINGE STRAP CAN BE INSTALLED ON ROUND, SQUARE, OCTAGONAL
OR ANY SHAPE POLE DESIRED.

11. ALL TOLERANCES OF CASTINGS SHALL BE ± 1/32".

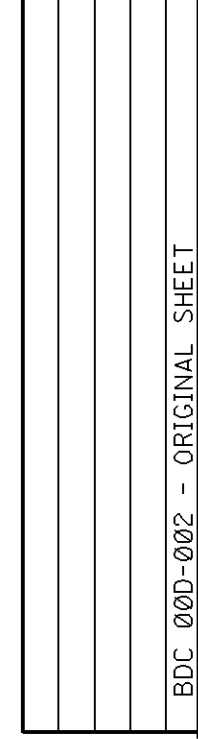
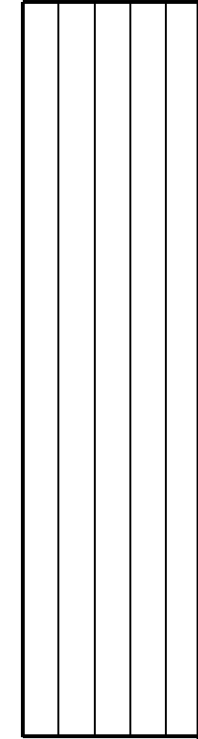
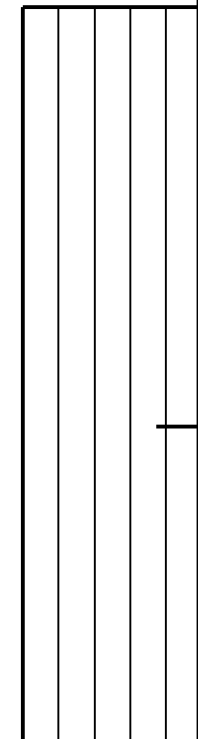
12. WHEN PEDESTRIAN CLAMP IS INSTALLED ON A 6" DIA. POLE, CLAMP
SHALL BE DESIGNED TO PROVIDE A MINIMUM GAP OF 1/4".

NEW JERSEY DEPARTMENT OF TRANSPORTATION

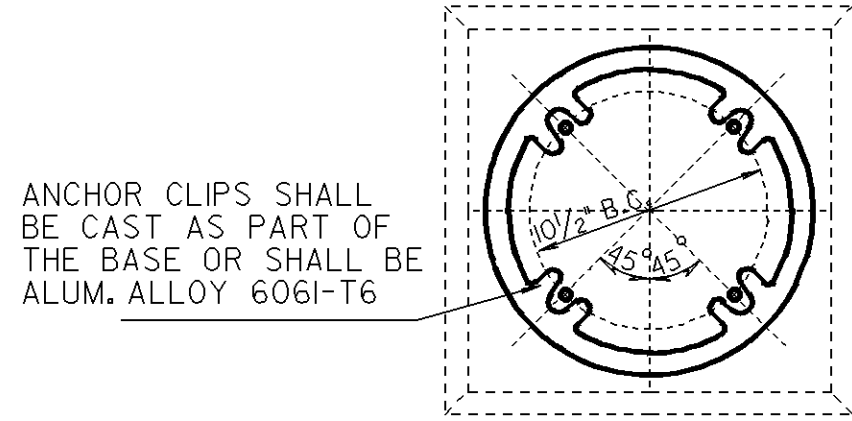
ELECTRICAL DETAILS
N.T.S.

POLE CLAMP MOUNTING

REFERENCE

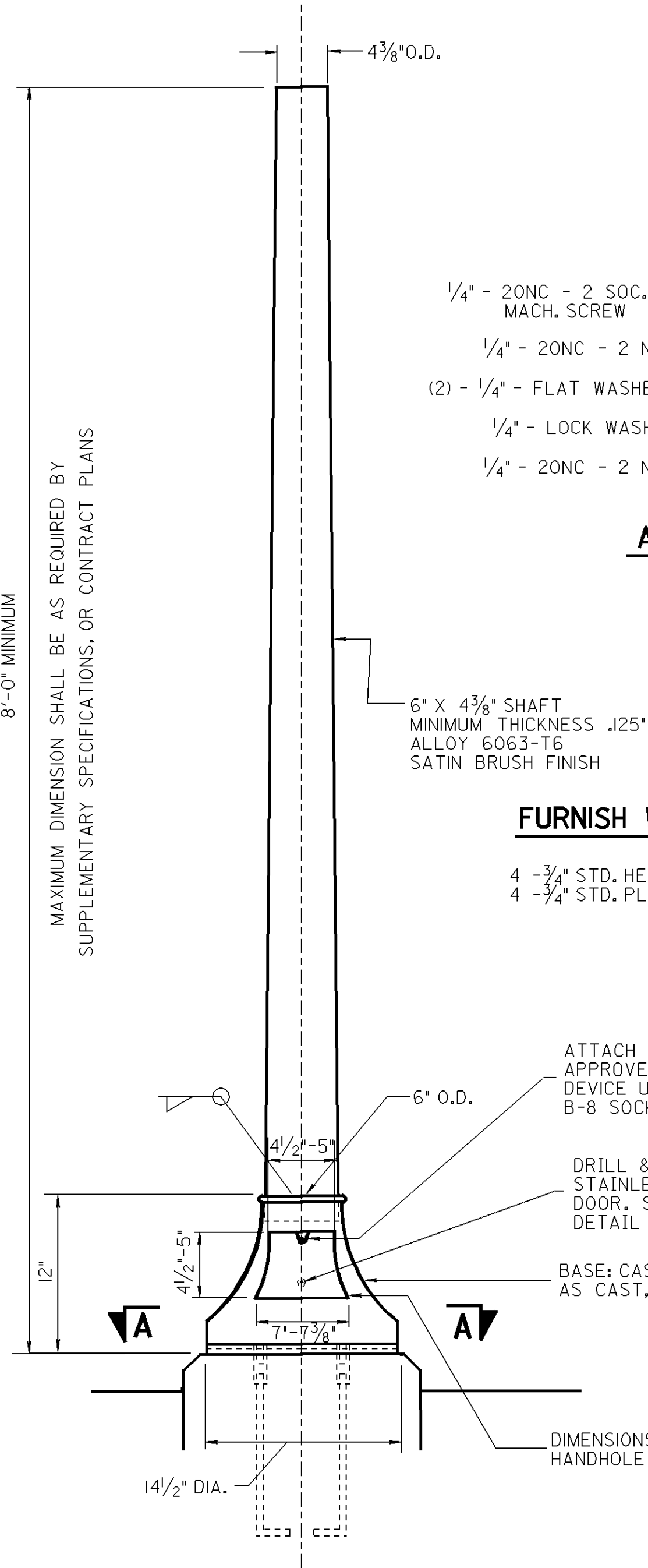


BDC 000-002 - ORIGINAL SHEET

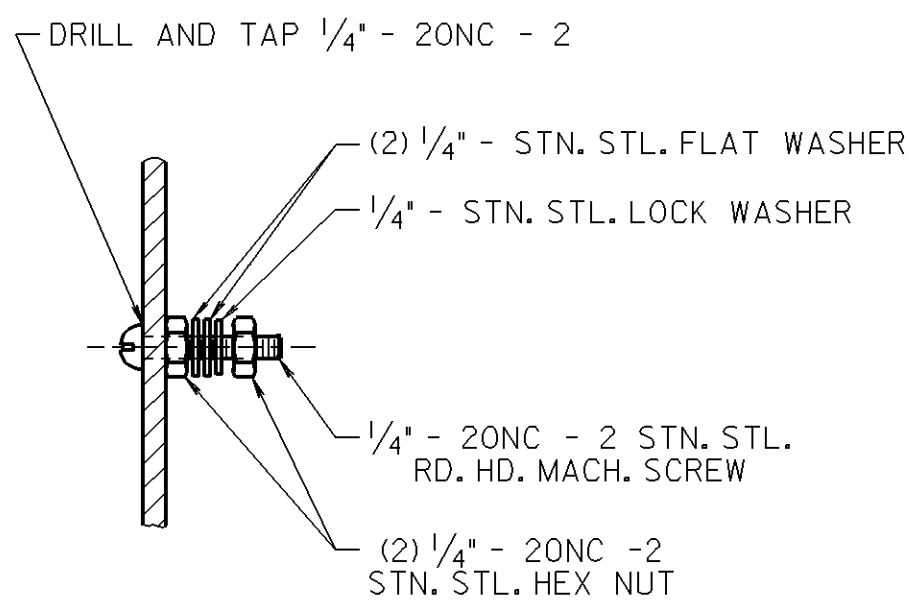


ANCHOR CLIPS SHALL BE CAST AS PART OF THE BASE OR SHALL BE ALUM. ALLOY 6061-T6

SECTION A-A

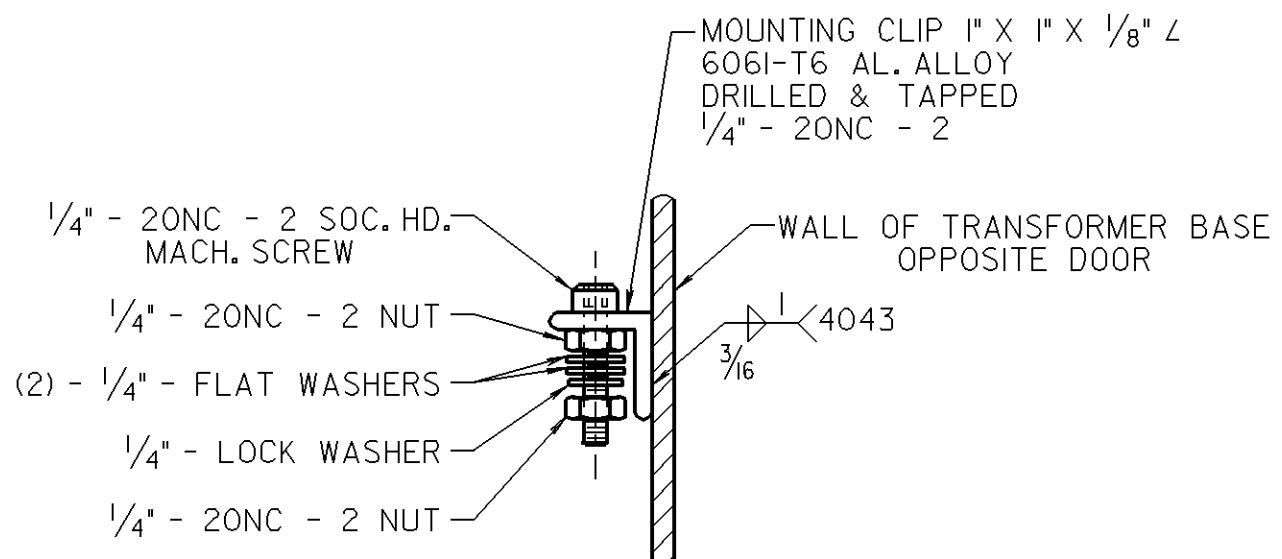


TRAFFIC SIGNAL PEDESTAL



DETAIL 'A'

GROUND STUD DETAIL
OPPOSITE DOOR OPENING



ALTERNATE DETAIL 'B'

GROUND STUD DETAIL
OPPOSITE DOOR OPENING

FURNISH WITH EACH PEDESTAL

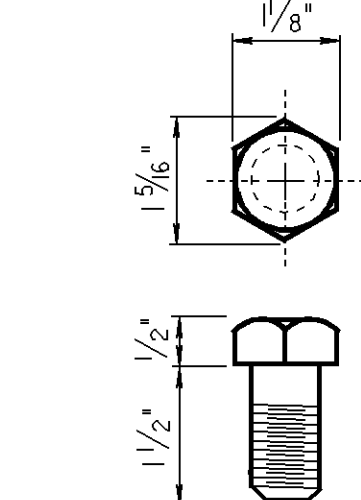
4 - 3/4\" STD. HEX. HEAD BOLT } SEE ANCHOR BOLT
4 - 3/4\" STD. PLAIN WASHER } DETAIL FOR TYPE

ATTACH DOOR TO BASE WITH AN APPROVED VANDAL RESISTANT LOCKING DEVICE USING A 1/4\" STN. STL. GRADE B-8 SOCKET HEAD CAP SCREW.

DRILL & TAP 1/4\"-20N.C. FOR 1 1/2\" STAINLESS STEEL GROUND STUD OPPOSITE DOOR. SEE DETAIL 'A' OR ALTERNATE DETAIL 'B'.

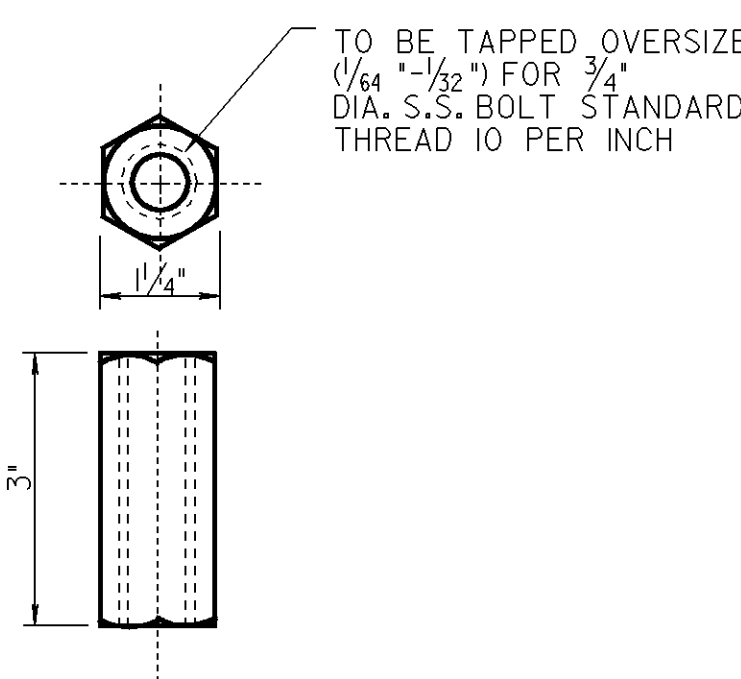
BASE: CAST ALUMINUM - 356 -T6 AS CAST, ASTM DES. SG70A

DIMENSIONS SHOWN ARE FOR HANDHOLE CLEARANCES.



3/4\" STD. HEX HD. BOLT

STAINLESS STEEL ASTM A-193 GRADE B8
U.S. STANDARD THREADS 10 PER INCH
4- REQ'D. PER PEDESTAL

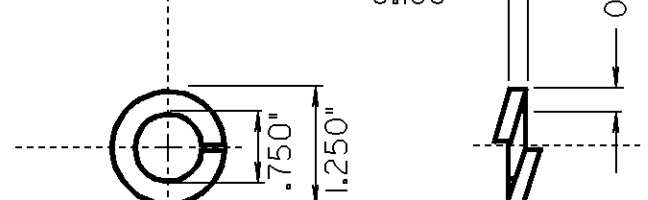


HEX STEEL ROD COUPLING

GALVANIZED PER ASTM A-153
3/4\" U.S. STD. THREADS (SEE NOTE ABOVE)
1/4\" HEX STOCK 4-REQ'D. PER PEDESTAL

3/4\" SAE STD. PLAIN WASHER

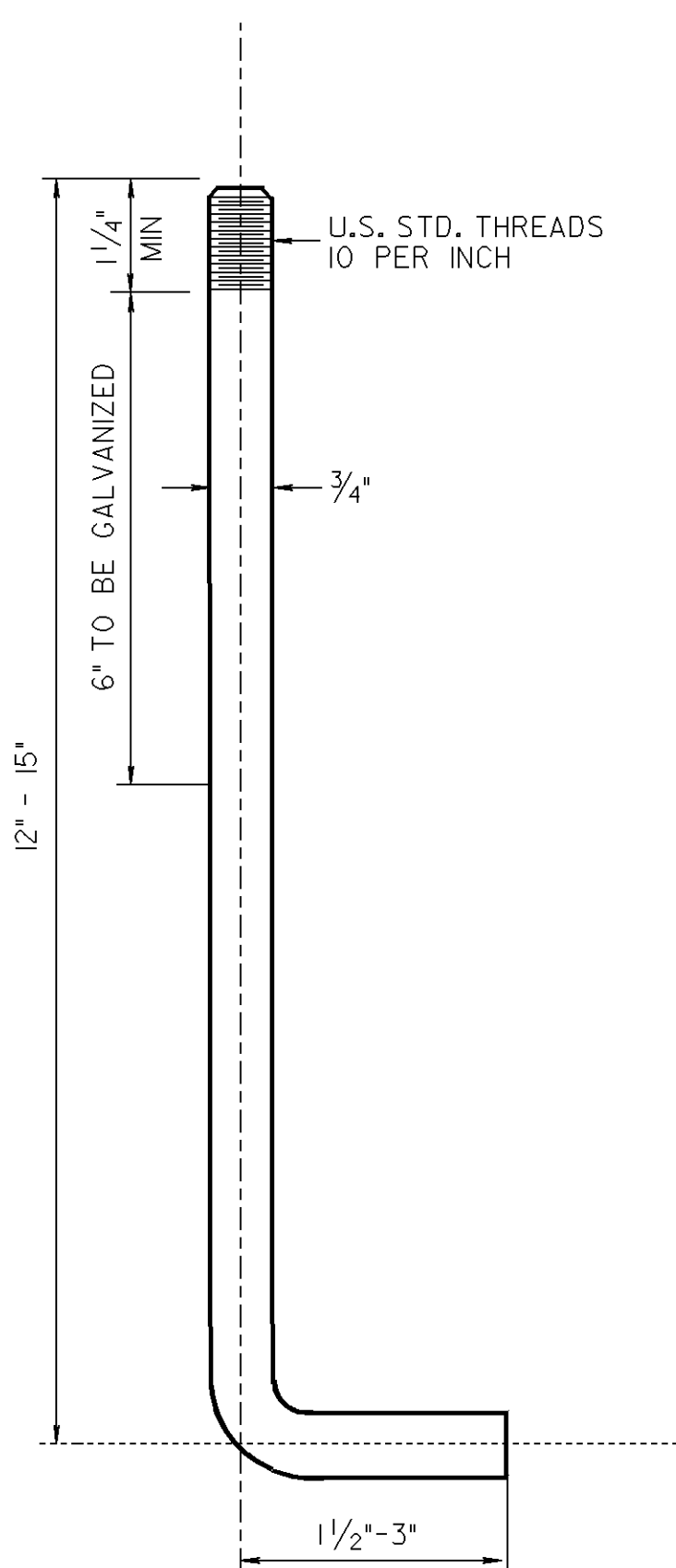
STAINLESS STEEL
4- REQ'D. PER PEDESTAL



3/4\" STD. LOCK WASHER

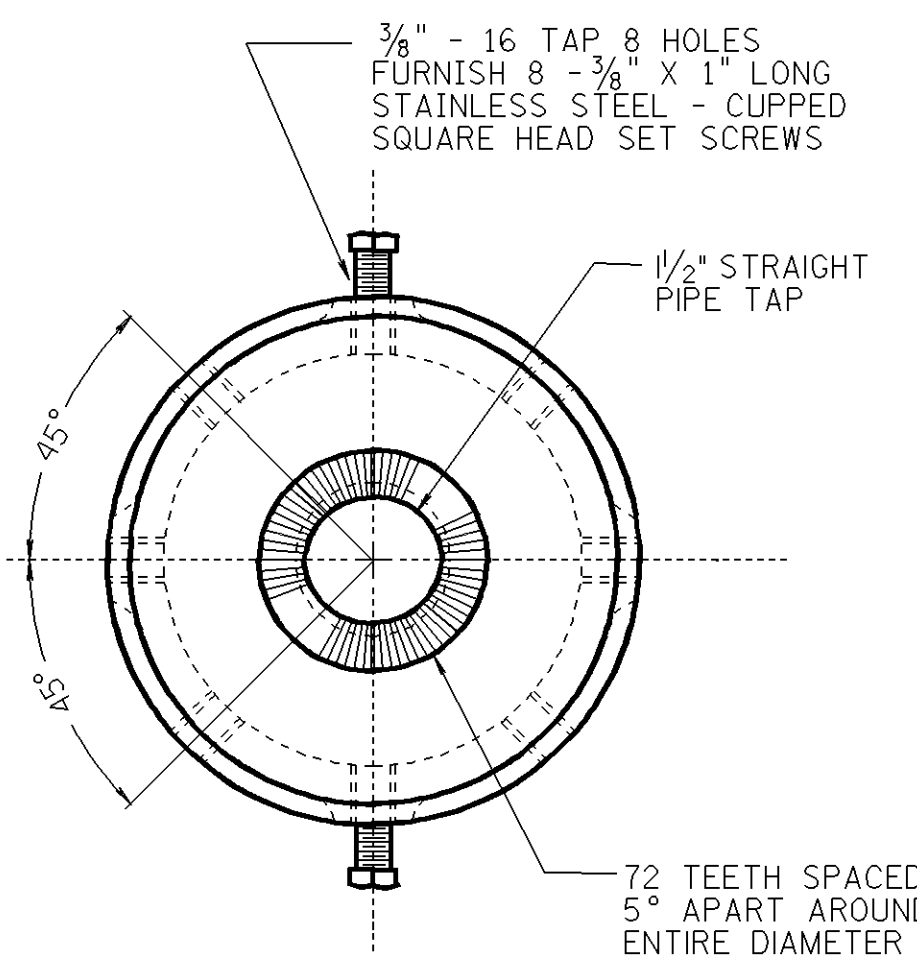
STAINLESS STEEL
4- REQ'D. PER PEDESTAL

ANCHOR BOLT DETAIL



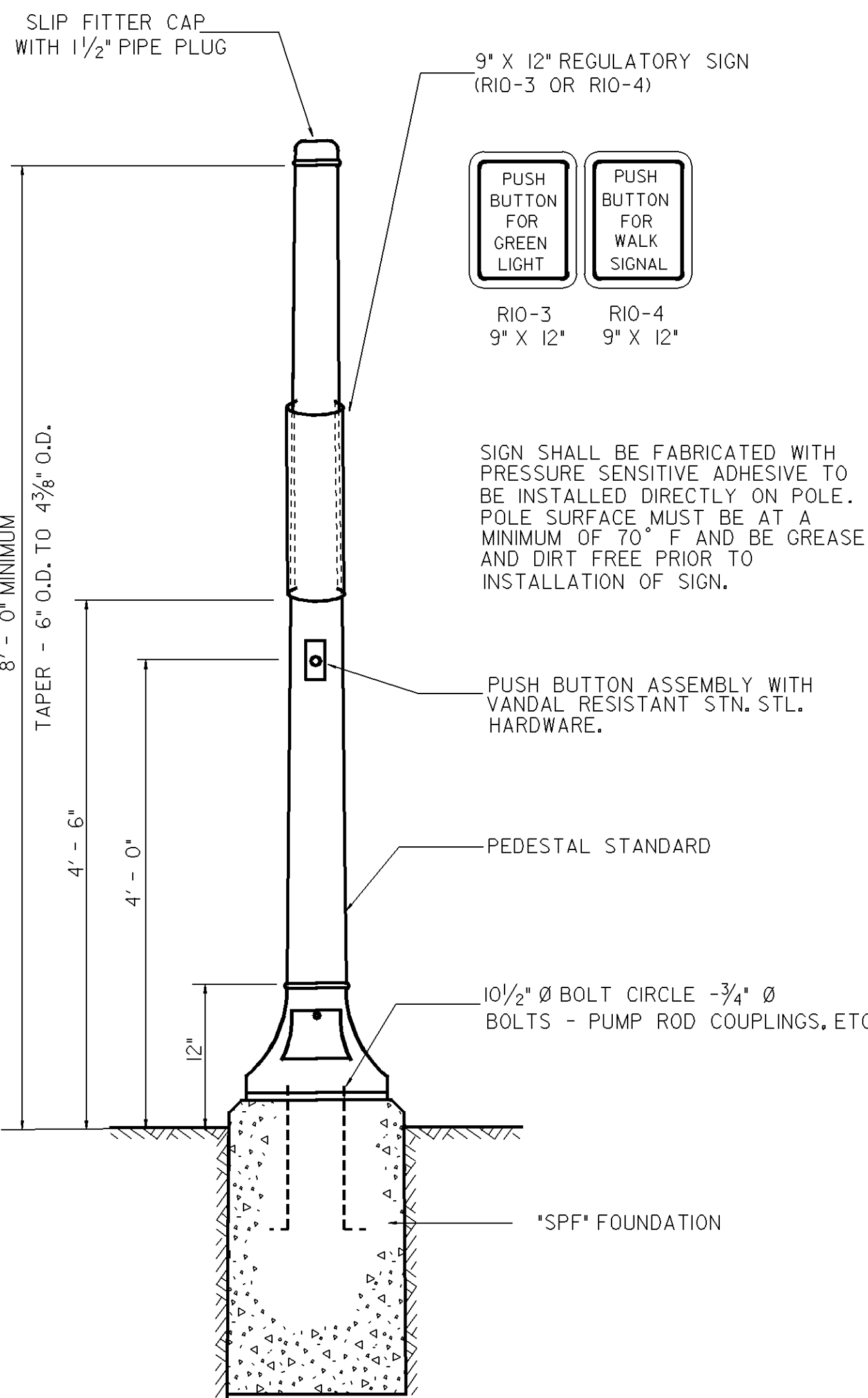
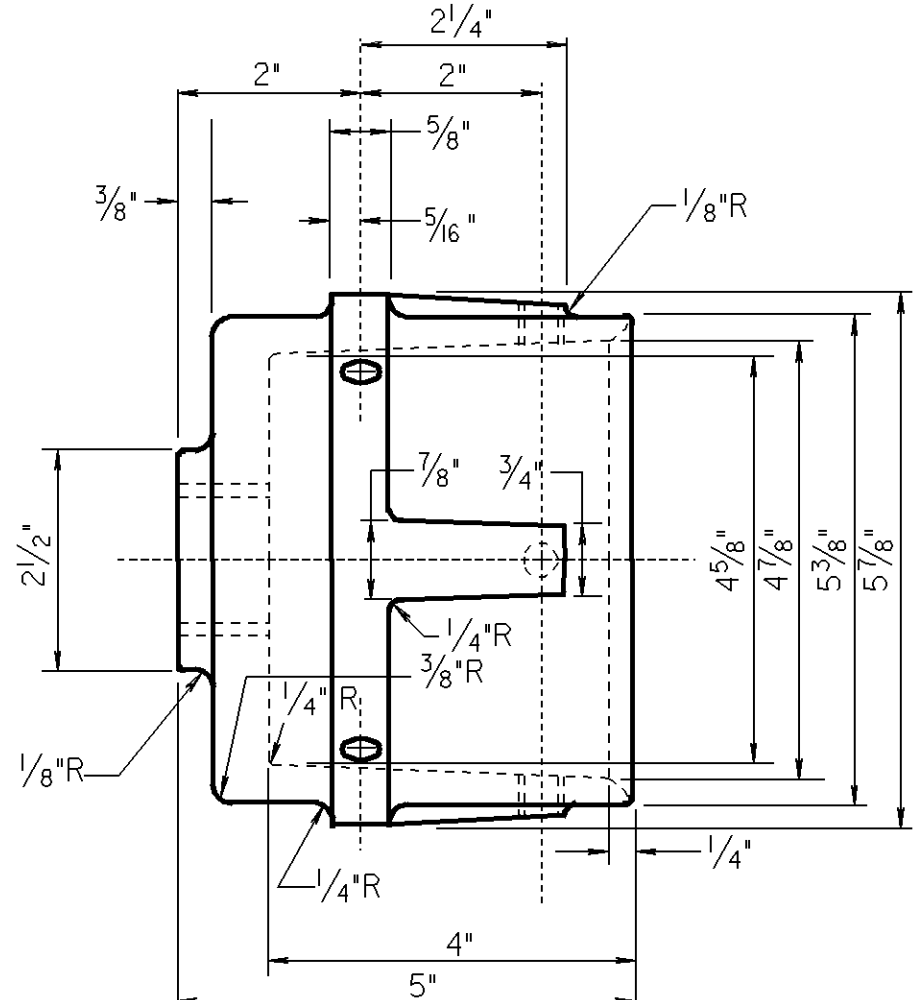
3/4\" DIA. ANCHOR BOLT

STEEL PER ASTM A-576
4- REQ'D. PER PEDESTAL
TOP 6\" SHALL BE GALVANIZED PER ASTM A-153



SLIP FITTER DETAIL

MATERIAL: ALUMINUM ALLOY 356



TYPICAL PUSH BUTTON STANDARD PUSH BUTTON ASSEMBLY INSTALLED

NOTES:

1. PEDESTAL STANDARDS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
2. ALL TOLERANCES OF CASTINGS SHALL BE $\pm 1/32$ ".

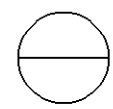
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

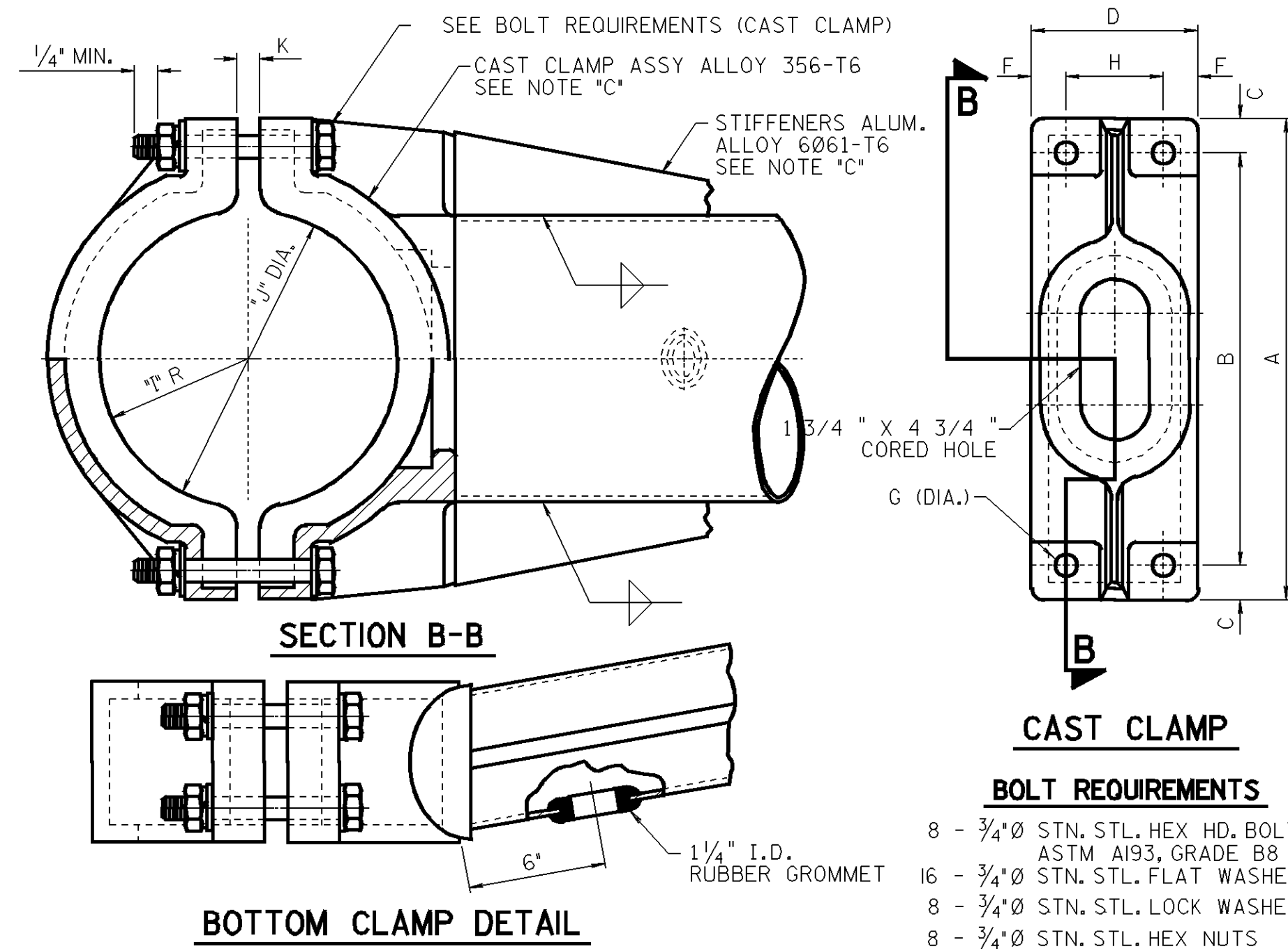
N.T.S.

TRAFFIC SIGNAL PEDESTAL, SLIP FITTER,
PUSH BUTTON STANDARD & ANCHOR BOLT

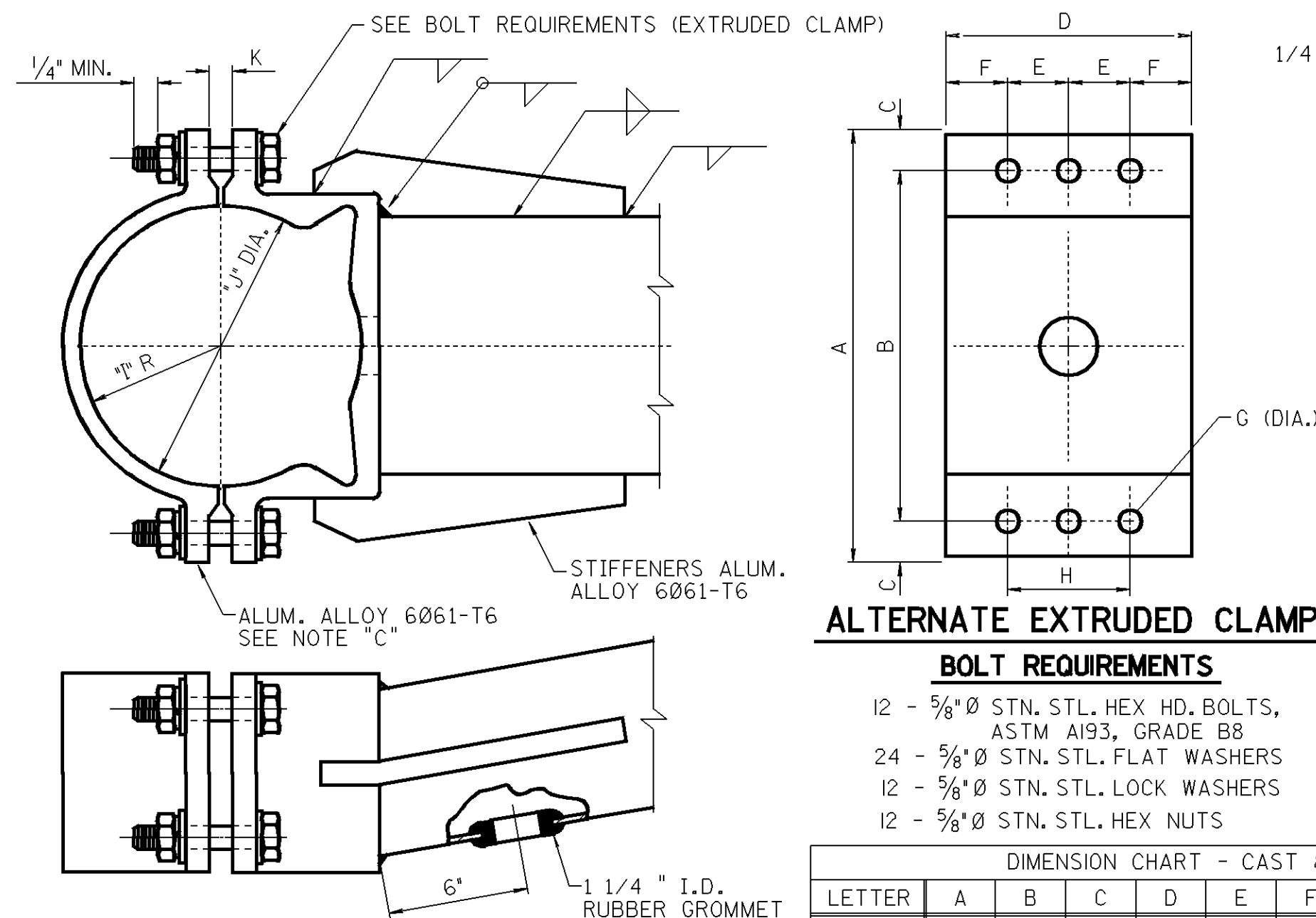
T-0701



BDC 00D-002 - ORIGINAL SHEET



SECTION B-B
BOTTOM CLAMP DETAIL
ALUM. ALLOY 356-T6
MIN. DRAFT WHERE REQUIRED



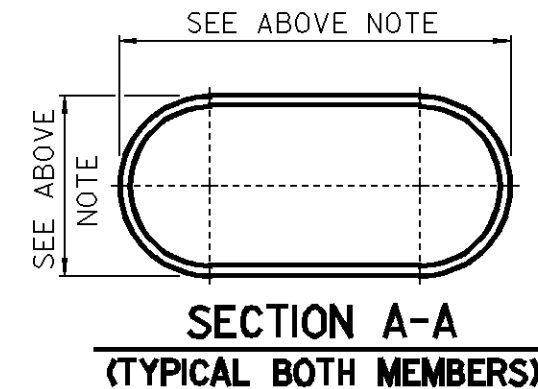
ALTERNATE EXTRUDED CLAMP

BOLT REQUIREMENTS

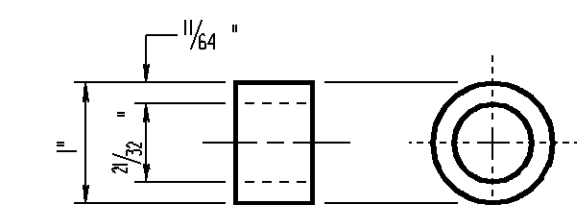
- 12 - 5/8" Ø STN. STL. HEX HD. BOLTS,
ASTM A193, GRADE B8
24 - 5/8" Ø STN. STL. FLAT WASHERS
12 - 5/8" Ø STN. STL. LOCK WASHERS
12 - 5/8" Ø STN. STL. HEX NUTS

DIMENSION CHART - CAST & EXTRUDED CLAMP											
LETTER	A	B	C	D	E	F	G	H	I	J	K
MIN. "	12 7/8	10 7/8	15/16	5	1 1/2	15/16	1 1/16	3	4 1/2	9	1 1/2
MAX. "	14 3/8	12 3/8	1	7	1 5/16	1 1/2	2 3/16	3 3/8	4 7/32	9 1/16	2 1/4

- NOTE
1. 20' & 25' MAST ARMS
MIN. 6" X .188" WALL TUBE
ELLIPSIZED TO APPROX.
3" X 8" SECTION
2. 15' MAST ARM
MIN. 5" X .188" WALL TUBE
ELLIPSIZED TO APPROX.
3" X 6 1/2" SECTION

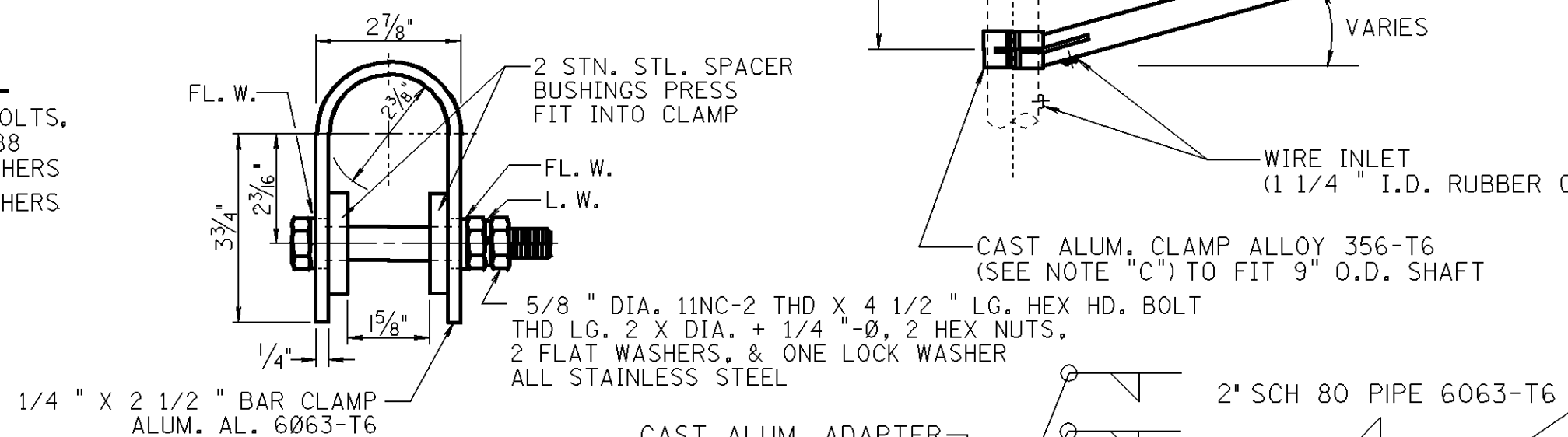


SECTION A-A
(TYPICAL BOTH MEMBERS)

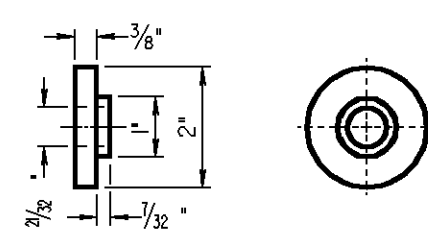


SECTION C-C
(TYPICAL ALL STRUTS)

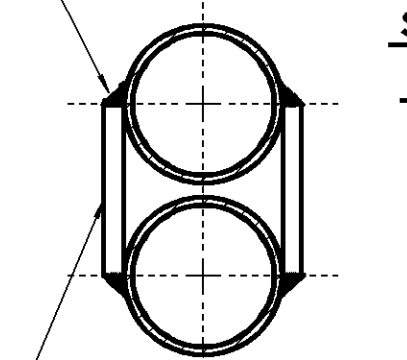
**STN. STL. BUSHING FOR
ALTERNATE MOUNTING STRAP**



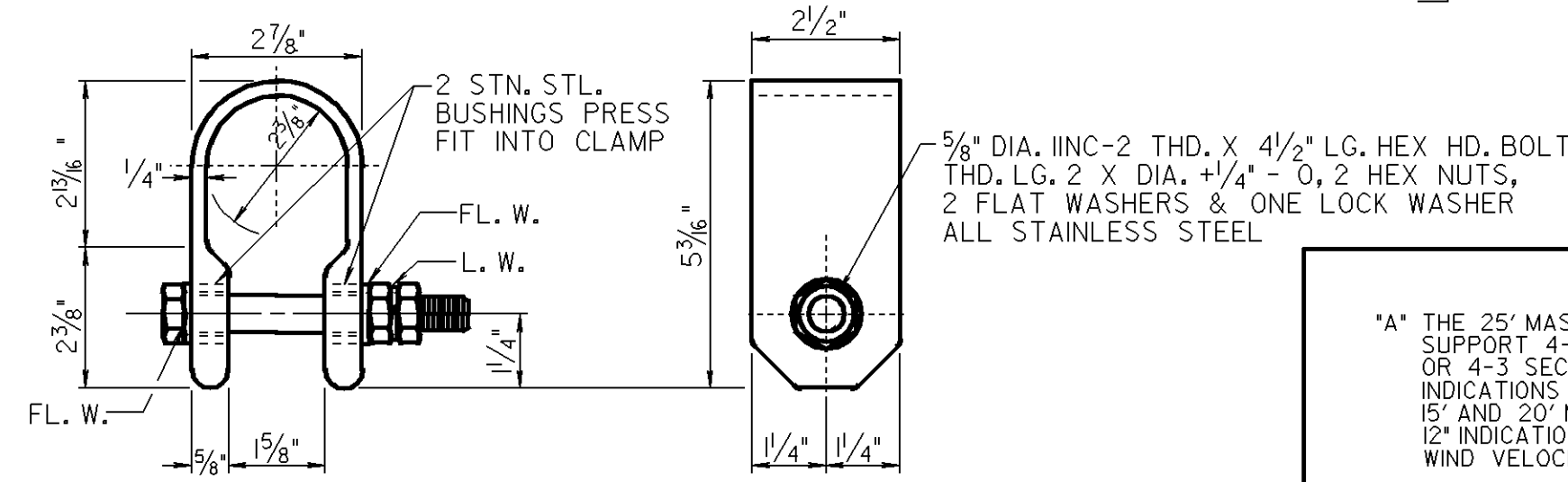
MOUNTING STRAP DETAIL
(FOR ALTERNATE MOUNTING STRAP
SEE DETAIL ON THIS SHEET)



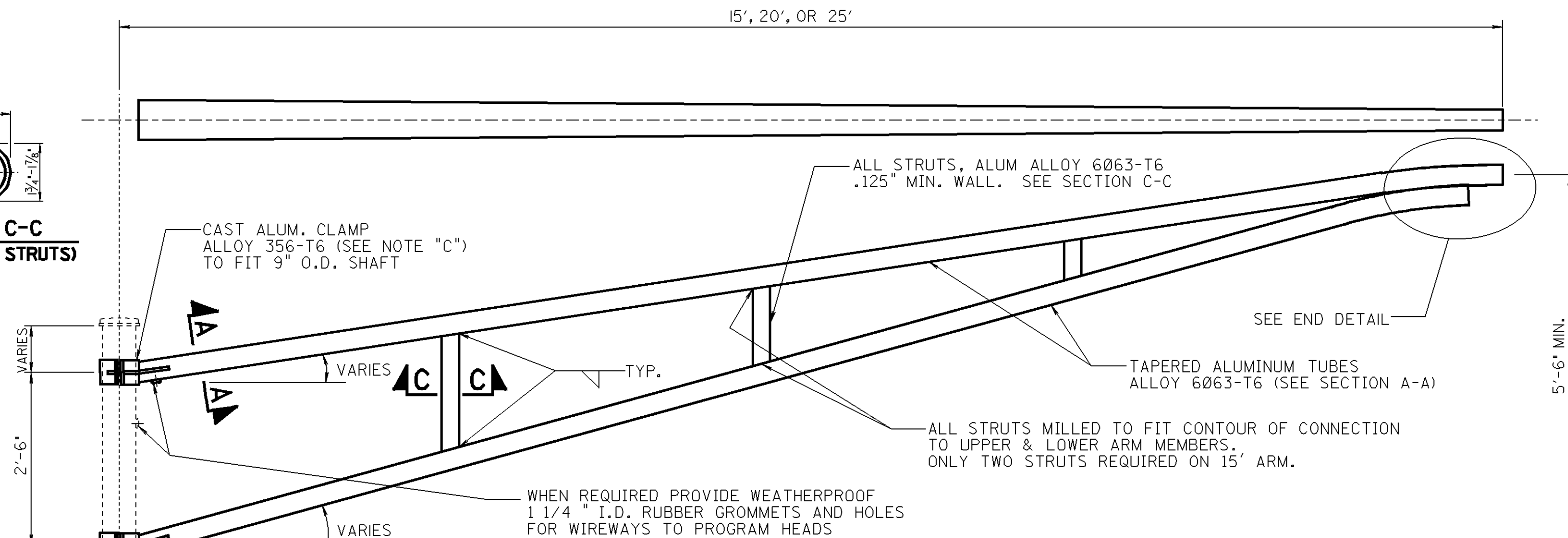
**STAINLESS STEEL
SPACER BUSHING**



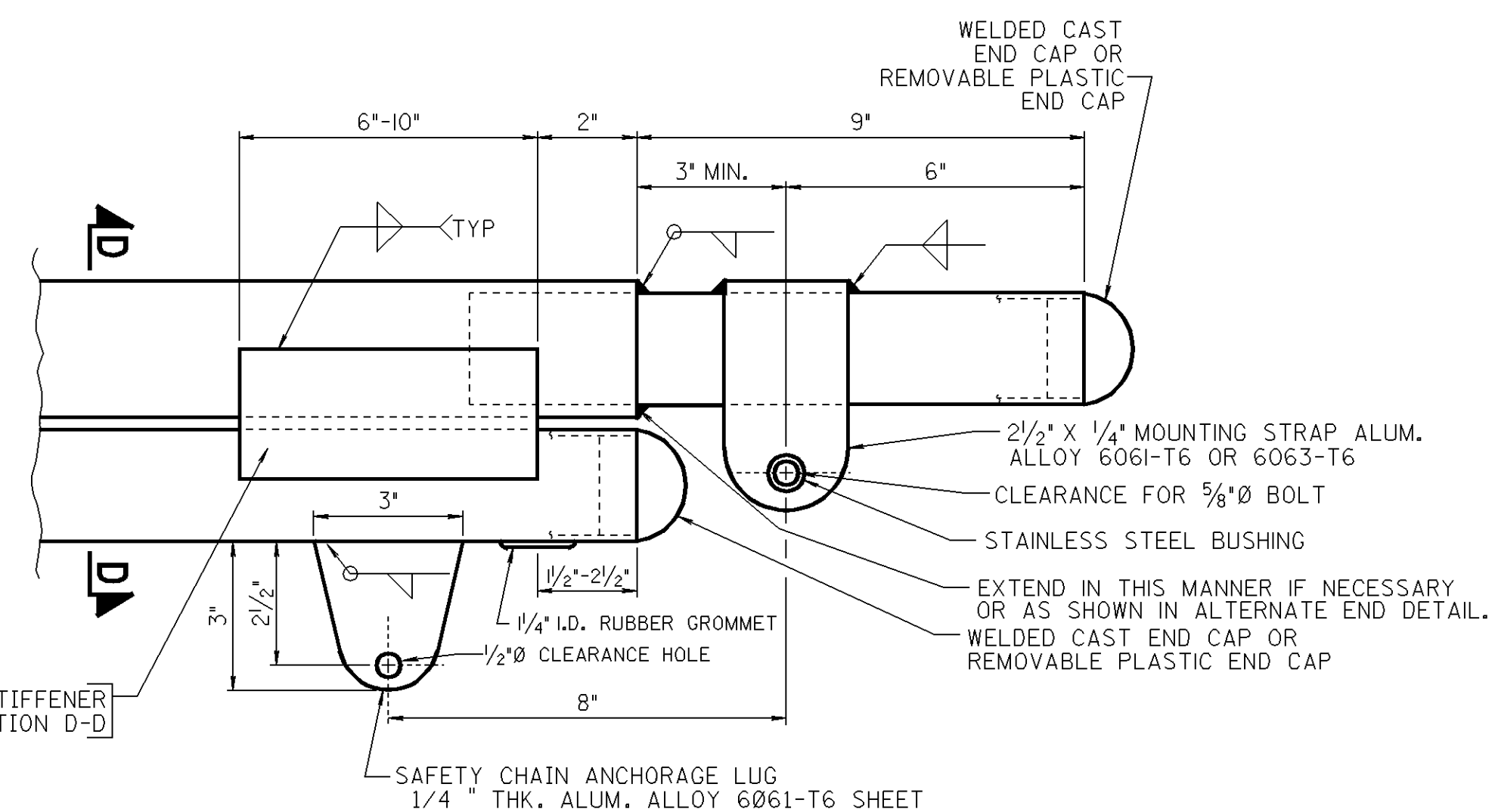
SECTION D-D
EXTRUSION
6061-T6 ALUM. ALLOY



ALTERNATE MOUNTING STRAP



TRAFFIC SIGNAL MAST ARM FOR TYPE 'K' POLES



END DETAIL

A THE 25' MAST ARM SHALL BE DESIGNED TO ADEQUATELY SUPPORT 4-4 SECTION 8\"/>

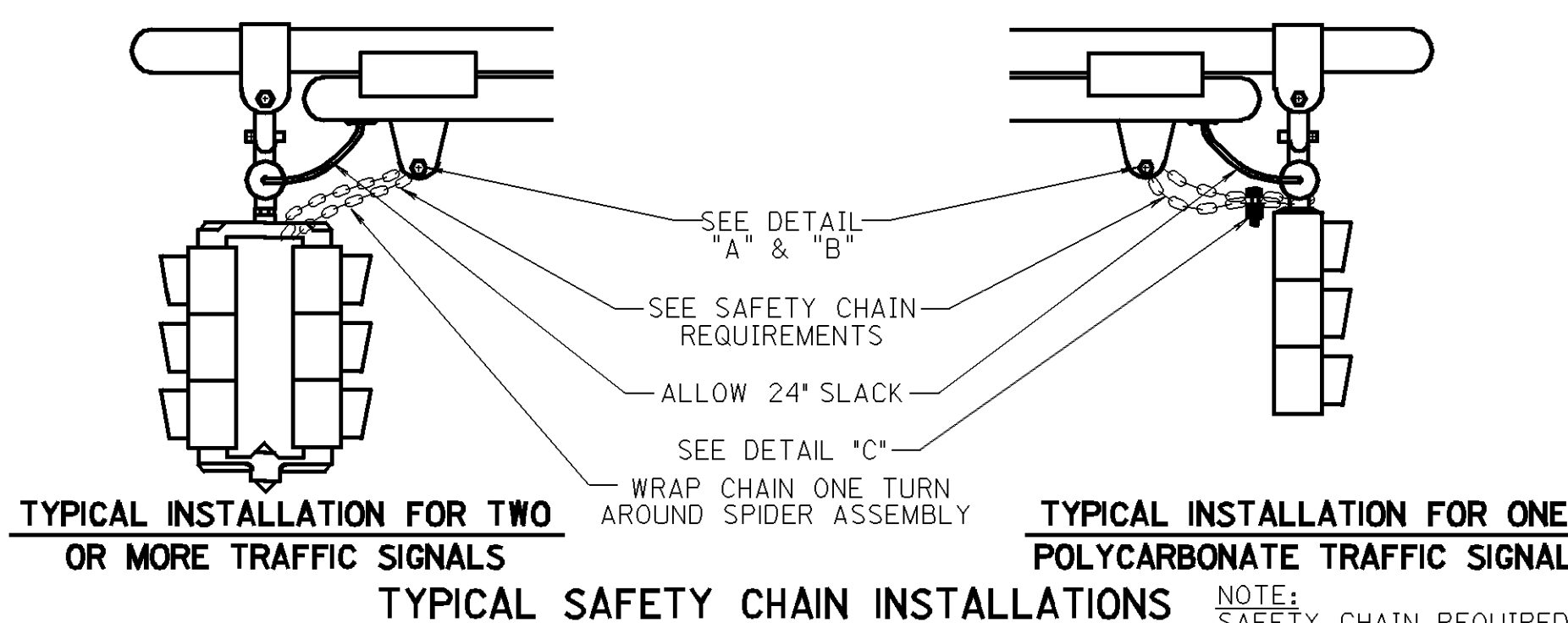
B MAST ARM WILL BE INSTALLED ON NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD ALUMINUM TRAFFIC SIGNAL POLE CONFORMING TO DRAWING NO. T-10 WITH TRANSFORMER BASE DRAWING NO. T-10.

NOTES

C AN EXTRUDED CLAMP MAY BE SUPPLIED AS AN ALTERNATE TO THE CAST BAND INDICATED. GENERAL CONFIGURATION MUST BE SIMILAR AND STIFFENERS MUST BE INSTALLED AS INDICATED. CLAMP MUST FIT A 9\"/>

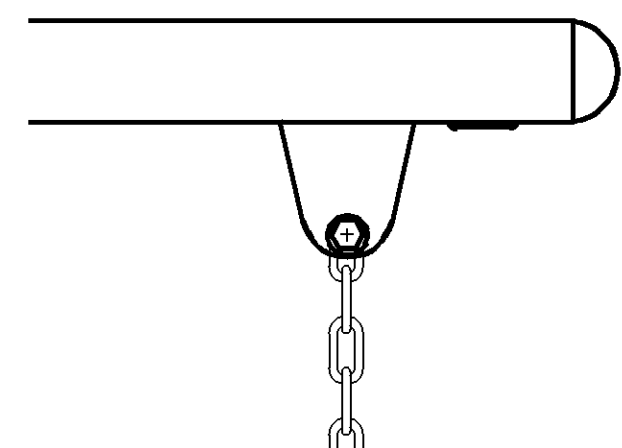
D UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

E ALL STAINLESS STEEL BOLTS SHALL CONFORM TO ASTM A193 GRADE B8.

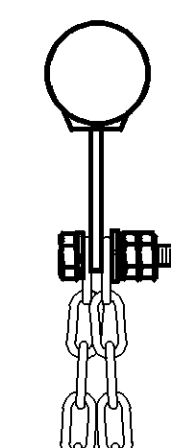


TYPICAL SAFETY CHAIN INSTALLATIONS

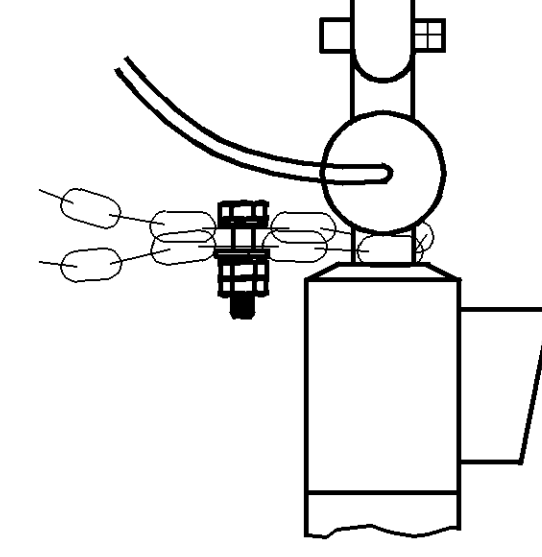
NOTE:
SAFETY CHAIN REQUIRED TO BE FURNISHED & INSTALLED ON ALL CONTRACT INSTALLATIONS BY THE CONTRACTOR



DETAIL 'A'



DETAIL 'B'



DETAIL 'C'

**SAFETY CHAIN REQUIREMENTS FOR
TWO OR MORE TRAFFIC SIGNALS**

- FURNISH:
42' OF 1/4\"/>

**SAFETY CHAIN REQUIREMENTS FOR
ONE TRAFFIC SIGNAL**

- FURNISH:
42' OF 1/4\"/>

NEW JERSEY DEPARTMENT OF TRANSPORTATION

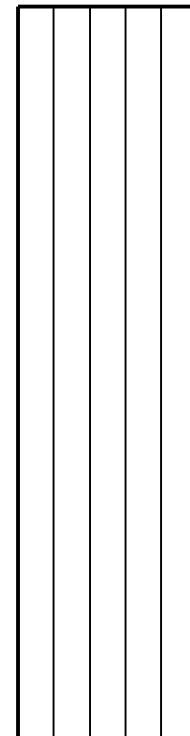
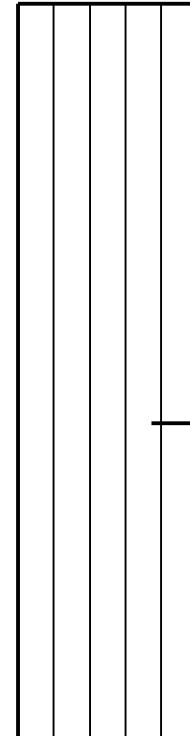
ELECTRICAL DETAILS

N.T.S.

TRAFFIC SIGNAL MAST ARM 15', 20' & 25'
WITH CLAMP DETAIL FOR TYPE 'K' POLE

T-090I

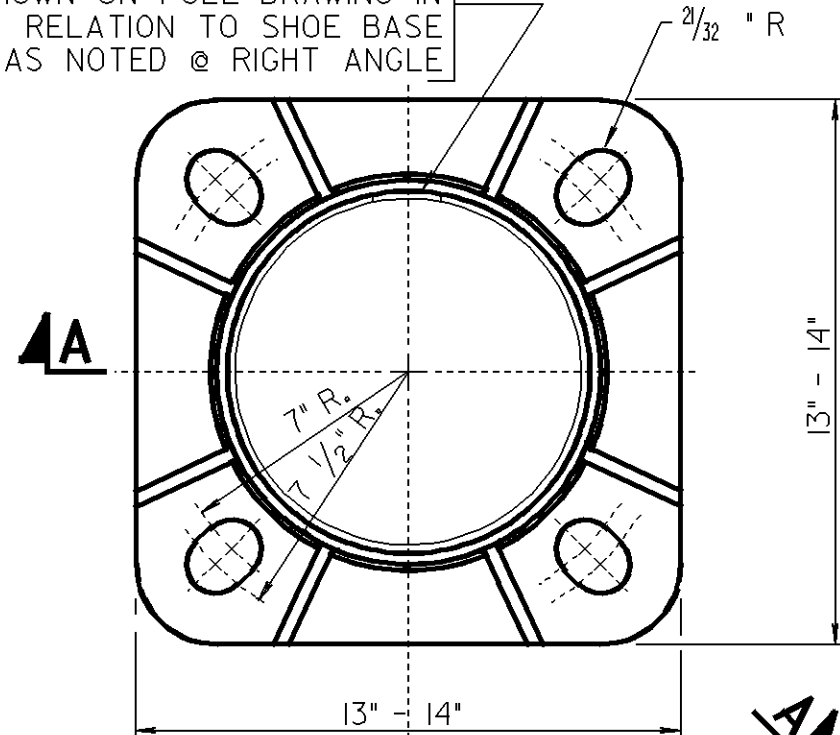
REFERENCE



BDC 000-002 - ORIGINAL SHEET

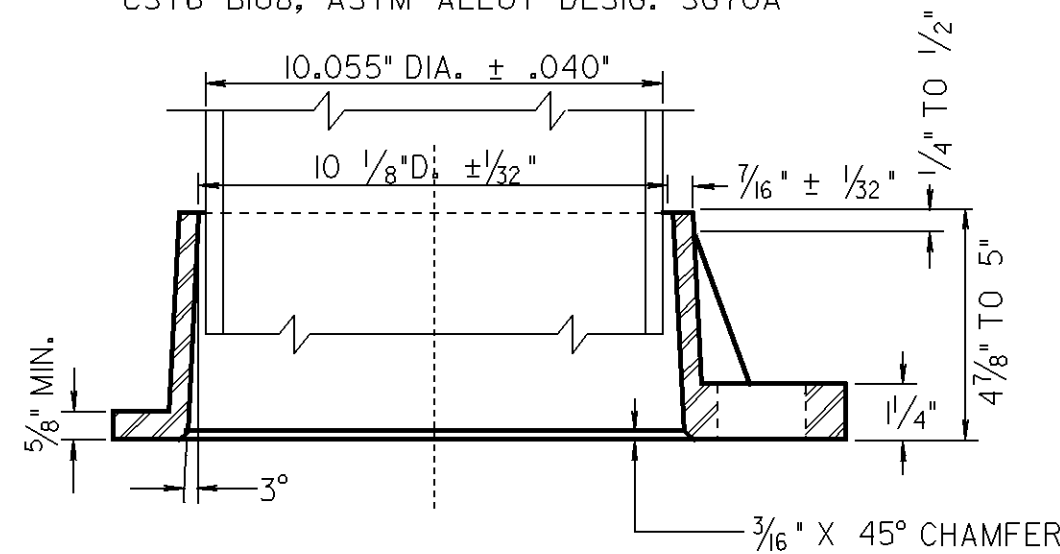
POLE SHALL NOT BE INSTALLED WITHOUT ARM

LOCATION OF CABLE OUTLET
AS SHOWN ON POLE DRAWING IN
RELATION TO SHOE BASE
AS NOTED @ RIGHT ANGLE

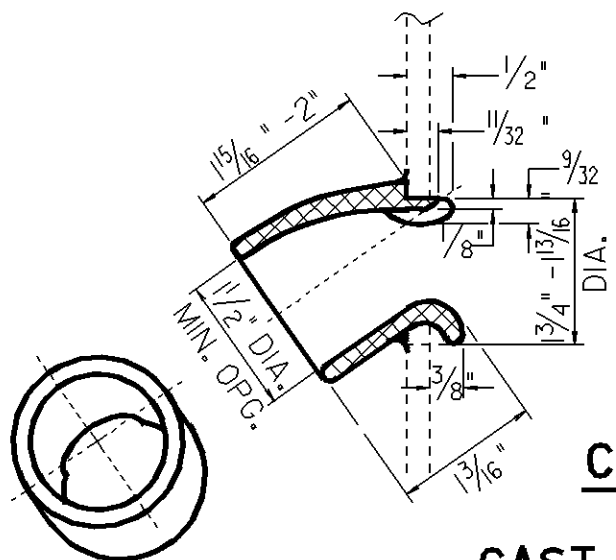


DETAIL 'A'
ALUMINUM SHOE BASE

ALUMINUM ALLOY 356-T6, ASTM SPEC.
NO. SAND CST6 B26 PERM. MOLD
CST6 B108, ASTM ALLOY DESIG. SG70A



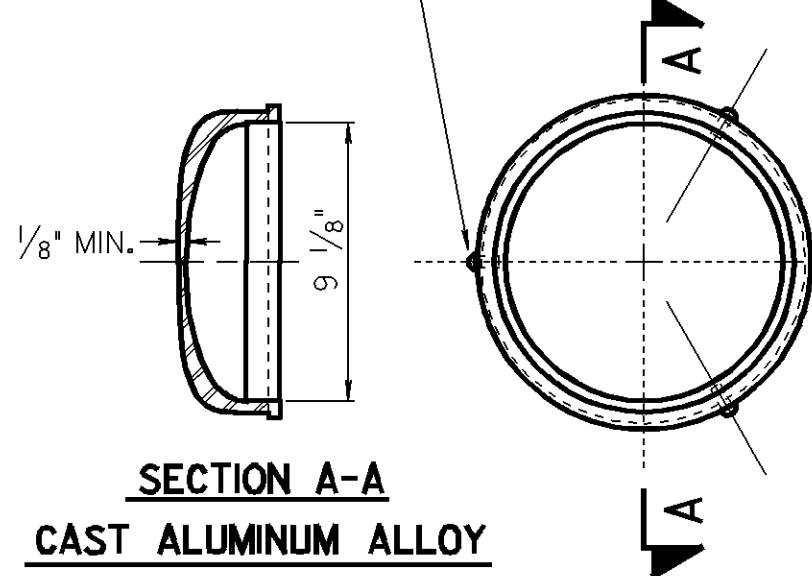
SECTION A-A



CABLE OUTLET

CAST ALUMINUM ALLOY
DETAIL 'B'

DRILL & TAP # 10-24NC2 X 1/2" LG.
STN. STL. MACHINE SCREW
@ 3 EQUAL SPACES



SECTION A-A
CAST ALUMINUM ALLOY

CAST ALUMINUM CAP

DETAIL 'C'

CAP - SEE DETAIL 'C'

FURNISH WITH EACH POLE

1. 4-1" DIA. X 4 1/2" LONG HEX HD. BOLTS 8 THDS. PER INCH, CLASS 2 - FREE FIT STAINLESS STEEL, ASTM A193 GRADE B8.
2. 4-1" DIA. PLAIN WASHERS, STAINLESS STEEL, (2" O.D. X 1/8" THICK)
3. 4-1" DIA. LOCK WASHERS, STAINLESS STEEL, (1/4" THICK).
4. 4-1" DIA. HEX NUTS, STAINLESS STEEL.
5. 4-BOLT COVERS, ALUMINUM ALLOY WITH GR. B8 STAINLESS STEEL SCREWS.
6. 4-1" DIA. PLAIN WASHERS, STAINLESS STEEL (2 1/2" O.D. 1/8" THICK OR 2" O.D. 1/8" THICK AS RECOMMENDED BY MANUFACTURER.)

9" O.D.
CABLE OUTLET -
SEE DETAIL 'B'

NOTES

- A. SLOT SHALL BE OF SUFFICIENT SIZE TO ACCEPT 1" DIA. BOLTS ON A 22" DIA. BOLT CIRCLE.
- B. SLOT SHALL BE OF SUFFICIENT SIZE TO ACCEPT 1" DIA. BOLTS ON A 15" DIA. BOLT CIRCLE.
- C. THE MAXIMUM LENGTH OF SLOT SHALL BE SUCH THAT WHEN A 13 1/2" SQUARE SHOE BASE IS MOUNTED ON TOP OF THE TRANSFORMER BASE, THE SLOTS SHALL BE COMPLETELY COVERED BY SHOE BASE.
- D. THE MAXIMUM THICKNESS OF BASE ALLOWED SHALL GUARANTEE A 1/4" MINIMUM INSERTION INTO PUMPROD COUPLING OF 3" LONG ANCHOR BOLT WITH LOCK WASHER AND FLAT WASHER INSTALLED, ASSUMING 1/4" SHIM.
- E. THE BASE SHALL BE DESIGNED SUCH THAT THERE IS A 1/8" MINIMUM CLEARANCE FROM THE 2 1/2" FLAT WASHER TO THE INNER SIDES.
- F. BASE SHALL MEET THE STRENGTH REQUIREMENTS NECESSARY TO SUPPORT THE MAXIMUM OVERTURNING MOMENT THAT A TYPE 'K' STANDARD WILL SUPPORT.
- G. THE BASE SHALL BE DESIGNED SUCH THAT A 2" OR 2 1/2" FLAT WASHER AS SUPPLIED BY THE MANUFACTURER'S SHALL HAVE A CLEARANCE TO THE INNER SIDES.
- H. THE MANUFACTURER SHALL SUPPLY ALL OTHER HARDWARE WHICH IT IS NECESSARY TO INSTALL THE BASE AS WELL AS INSTRUCTION FOR INSTALLATION.
- I. DIAGRAM IS FOR METHOD OF INSTALLATION.

10" O.D.

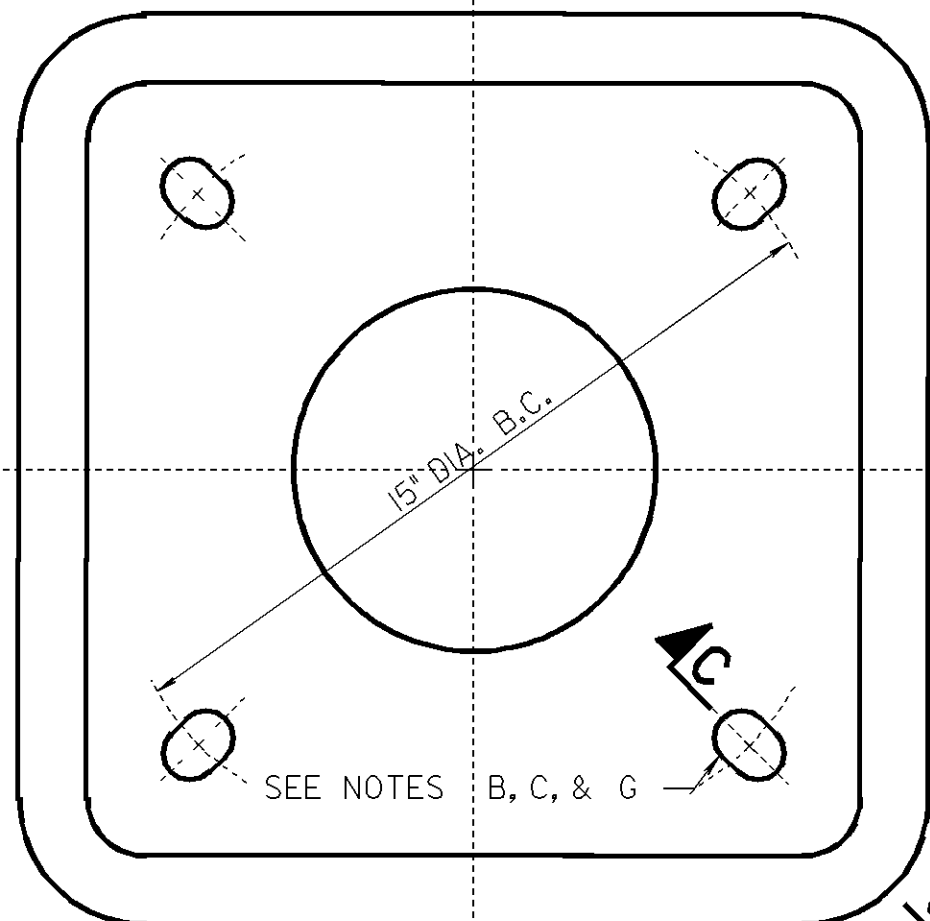
CONTINUOUS WELD
INERT GAS METHOD

SHOE BASE - SEE DETAIL 'A'

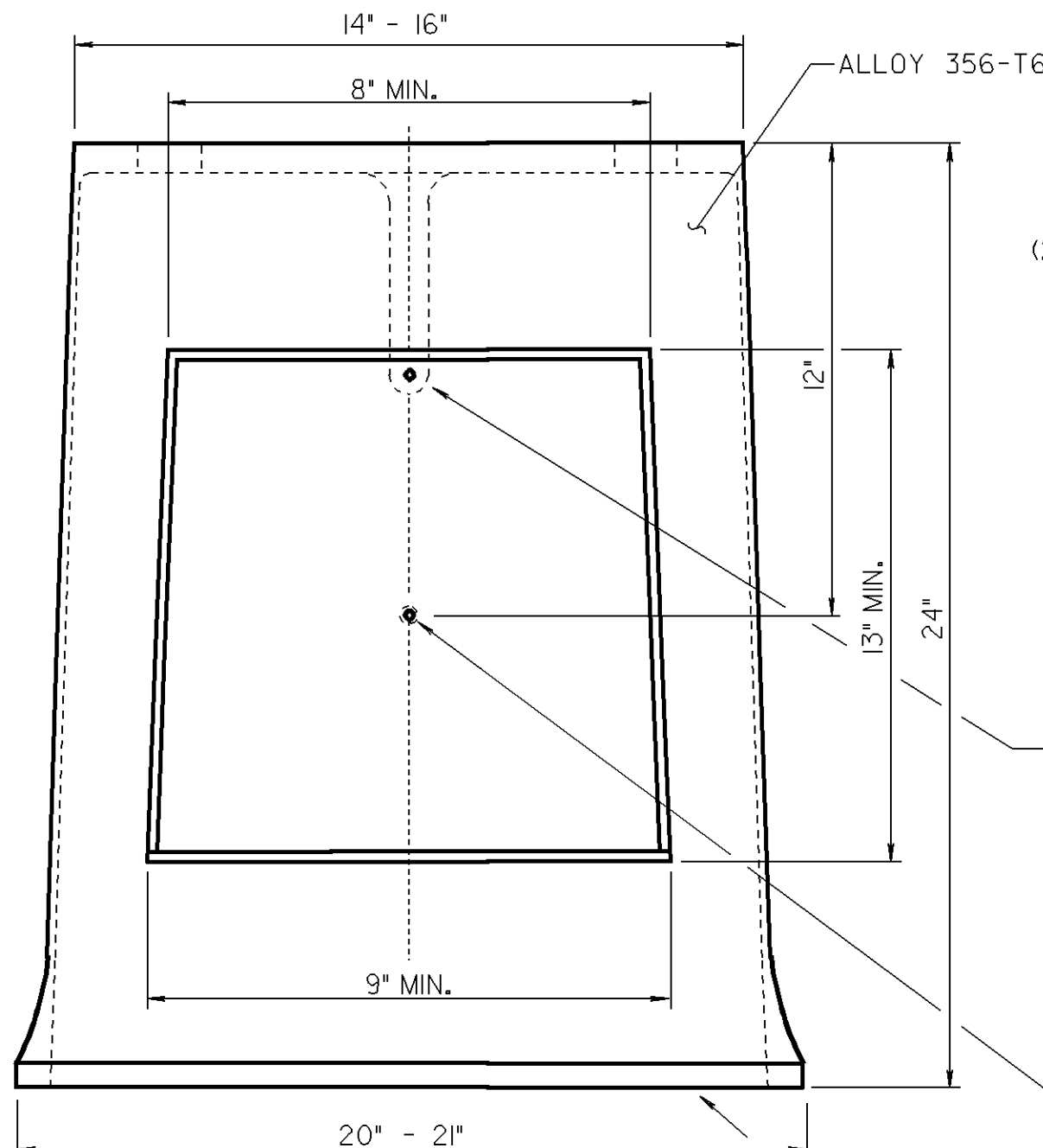
POLE

TRAFFIC SIGNAL POLE TYPE 'K'

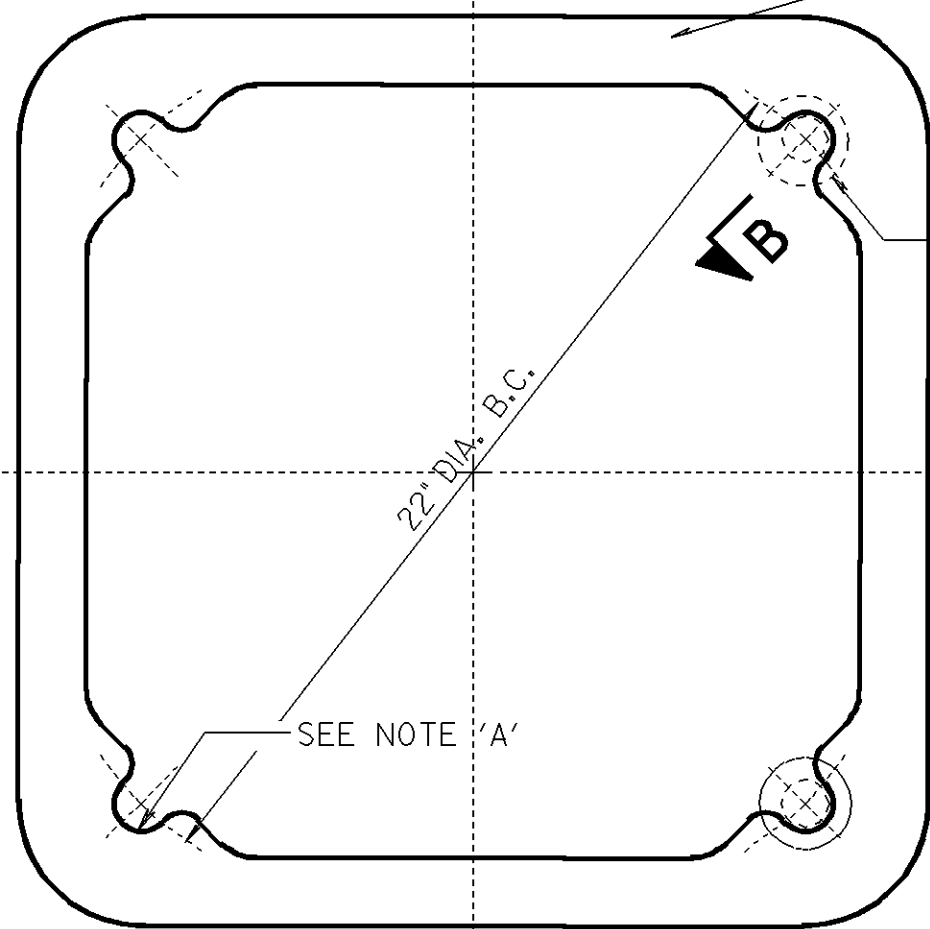
NOTE:
UNITS SHALL BE MANUFACTURED IN
ACCORDANCE WITH AASHTO STANDARD
SPEC. LATEST REVISION FOR STRUCTURAL
SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES
AND TRAFFIC SIGNALS.



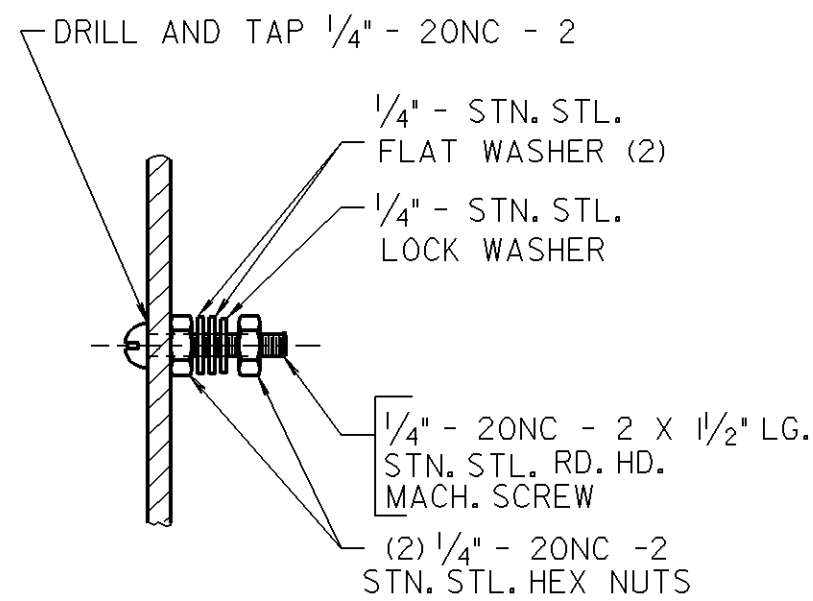
TOP VIEW



ELEVATION



BOTTOM VIEW
TRANSFORMER BASE - TYPE 'K'

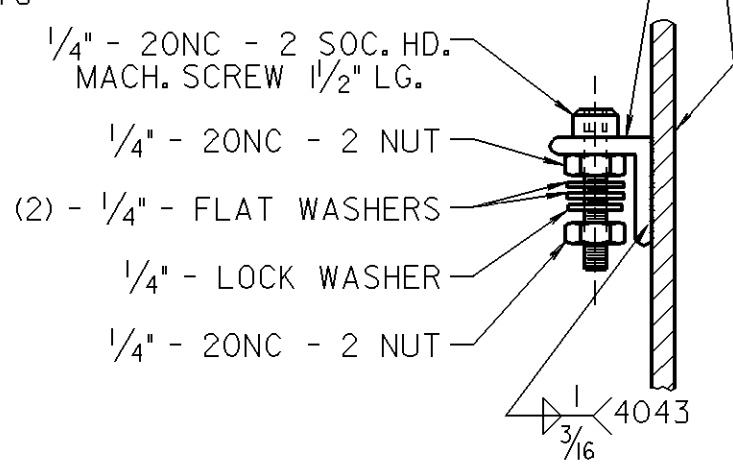


DETAIL 'D'

GROUND STUD DETAIL
OPPOSITE DOOR OPENING

WALL OF TRANSFORMER BASE

MOUNTING CLIP 1"X1"X1/8" L
6061-T6 AL. ALLOY
DRILLED AND TAPPED



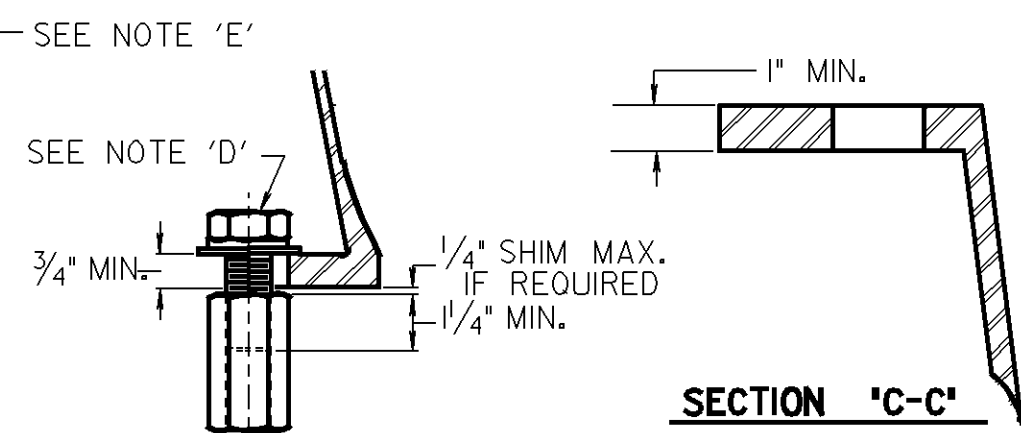
DETAIL 'E'

ALTERNATE GROUND STUD DETAIL
OPPOSITE DOOR OPENING

PROVIDE PLASTIC DOOR TYPE - ABS
MODIFIED FOR UV RESISTANCE. STEEL
GRAY COLOR, 3/8" THICK MIN. ATTACH
DOOR TO BASE WITH AN APPROVED,
VANDAL RESISTANT LOCKING DEVICE,
USING STAINLESS STEEL HARDWARE.

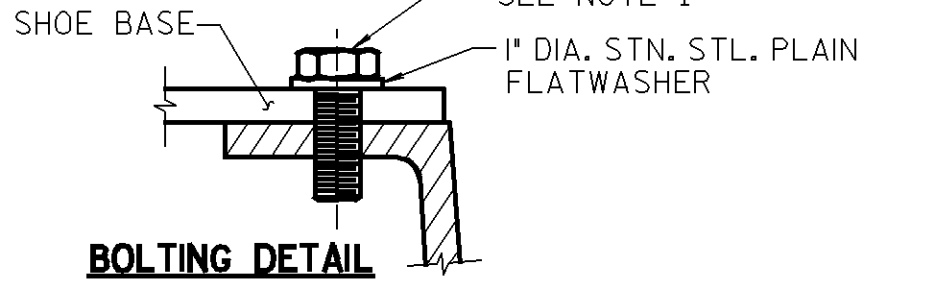
DRILL AND TAP HOLE FOR
1/4" X 1 1/2" - 20 NC - 2
STAINLESS STEEL GROUND STUD
OPPOSITE DOOR.
(SEE DETAIL D OR ALTERNATE DETAIL E)

BOTTOM PAINTED WITH
ONE COAT BITUMINOUS
BASE PAINT.

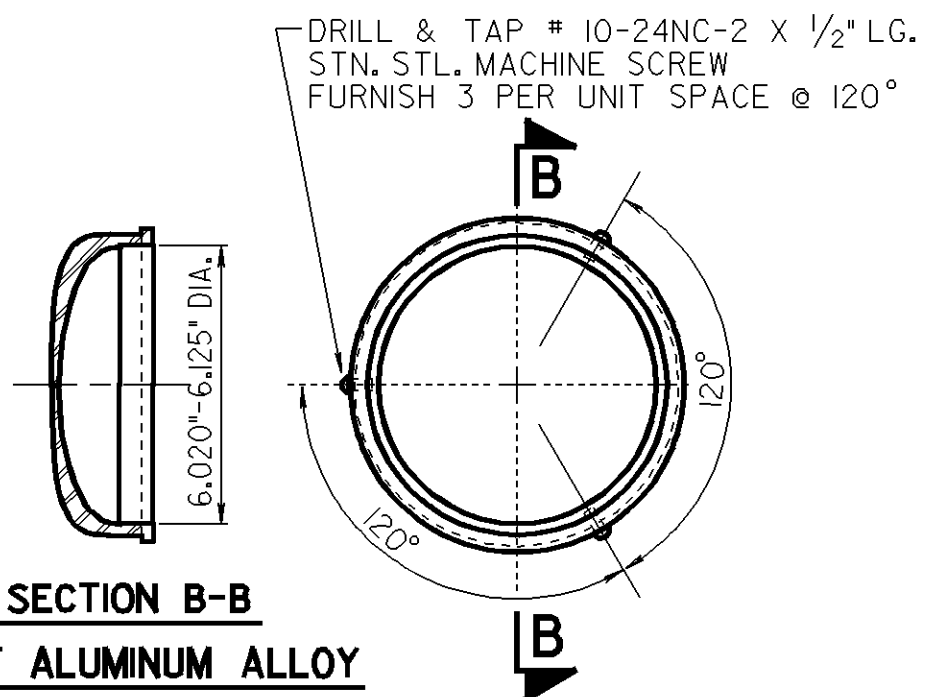


SECTION B-B

SECTION 'C-C'

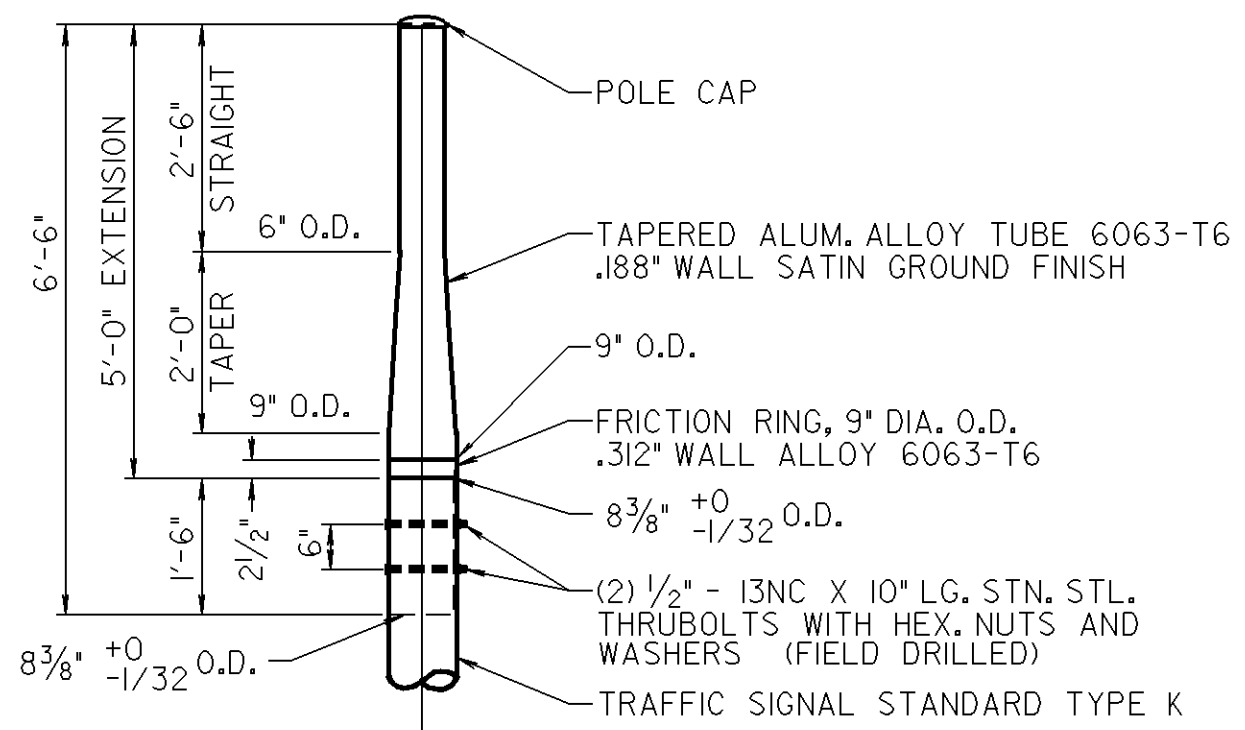


BOLTING DETAIL



SECTION B-B
CAST ALUMINUM ALLOY

CAST ALUMINUM CAP
DETAIL 'B'



TRAFFIC SIGNAL STANDARD TYPE 'KE'

NOTE:

1. FURNISH WITH EACH STANDARD:
 - (1) FRICTION RING, 9" DIA. O.D. .312" WALL ALLOY 6063-T6
 - (1) POLE CAP
 - (2) 1/2" - 13NC X 10" LG. STN. STL. THROUBOLTS WITH STN. STL. HEX NUTS AND STN. STL. WASHERS
2. CERTIFICATIONS SHALL BE FURNISHED THAT ALUMINUM ALLOY AND TEMPER SHOWN MEET REQUIREMENTS AS SET FORTH BELOW OR AS OTHERWISE INDICATED ON DRAWING.

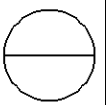
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

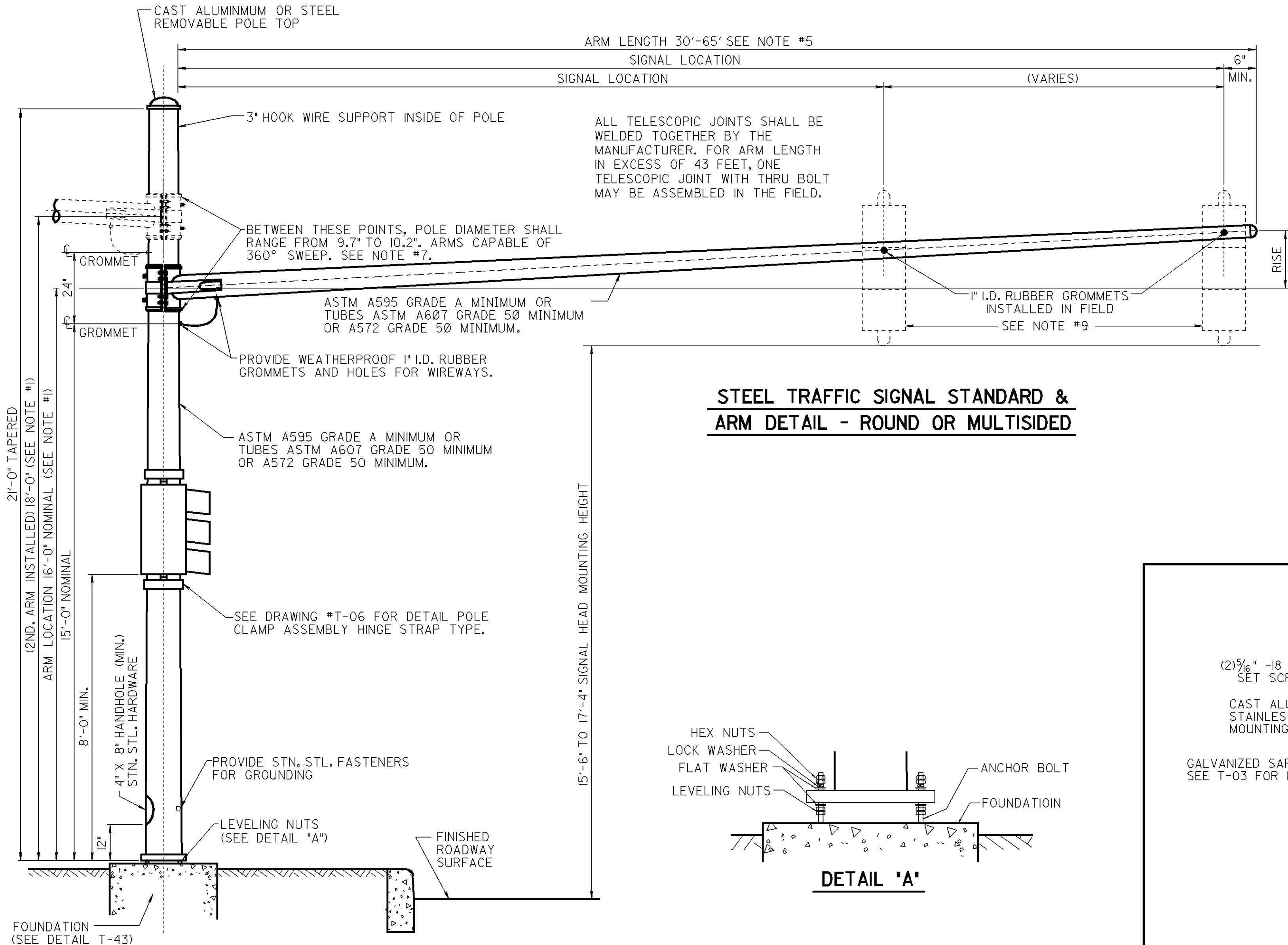
N.T.S.

TRAFFIC SIGNAL POLE TYPE 'K'
WITH CABLE OUTLET, SHOE BASE, CAP, TRANSFORMER
BASE & TRAFFIC SIGNAL STANDARD TYPE 'KE'

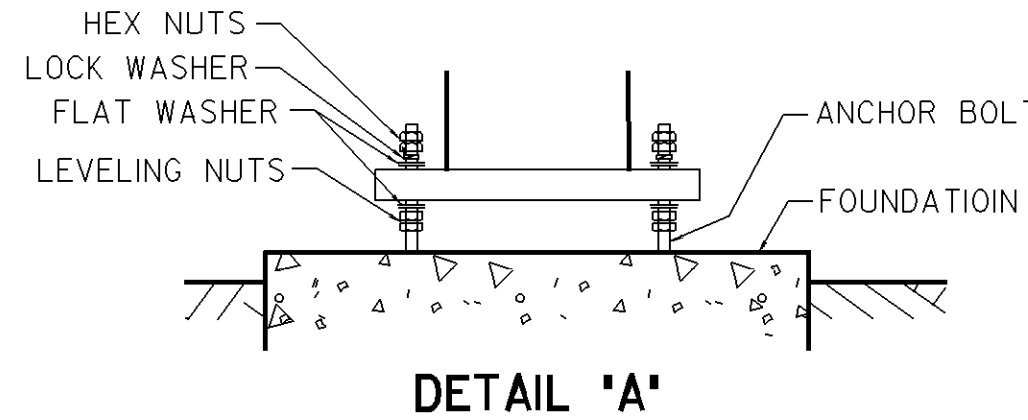
T-1001



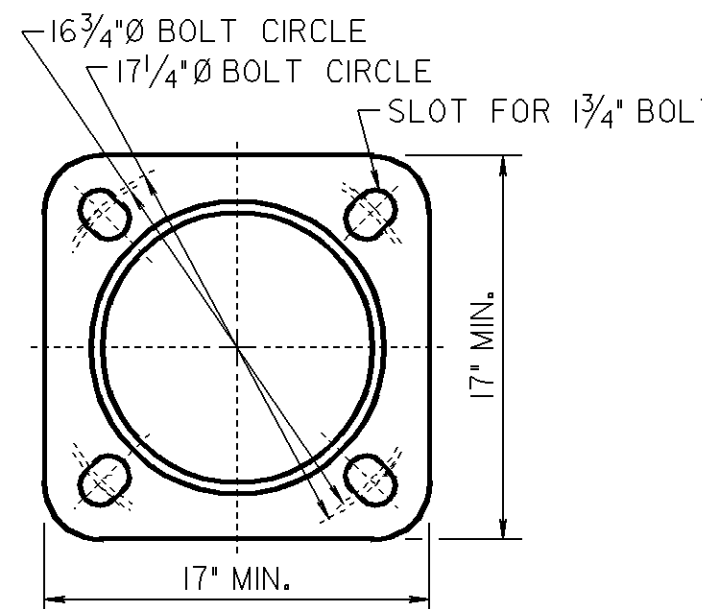
POLE SHALL NOT BE INSTALLED WITHOUT ARM



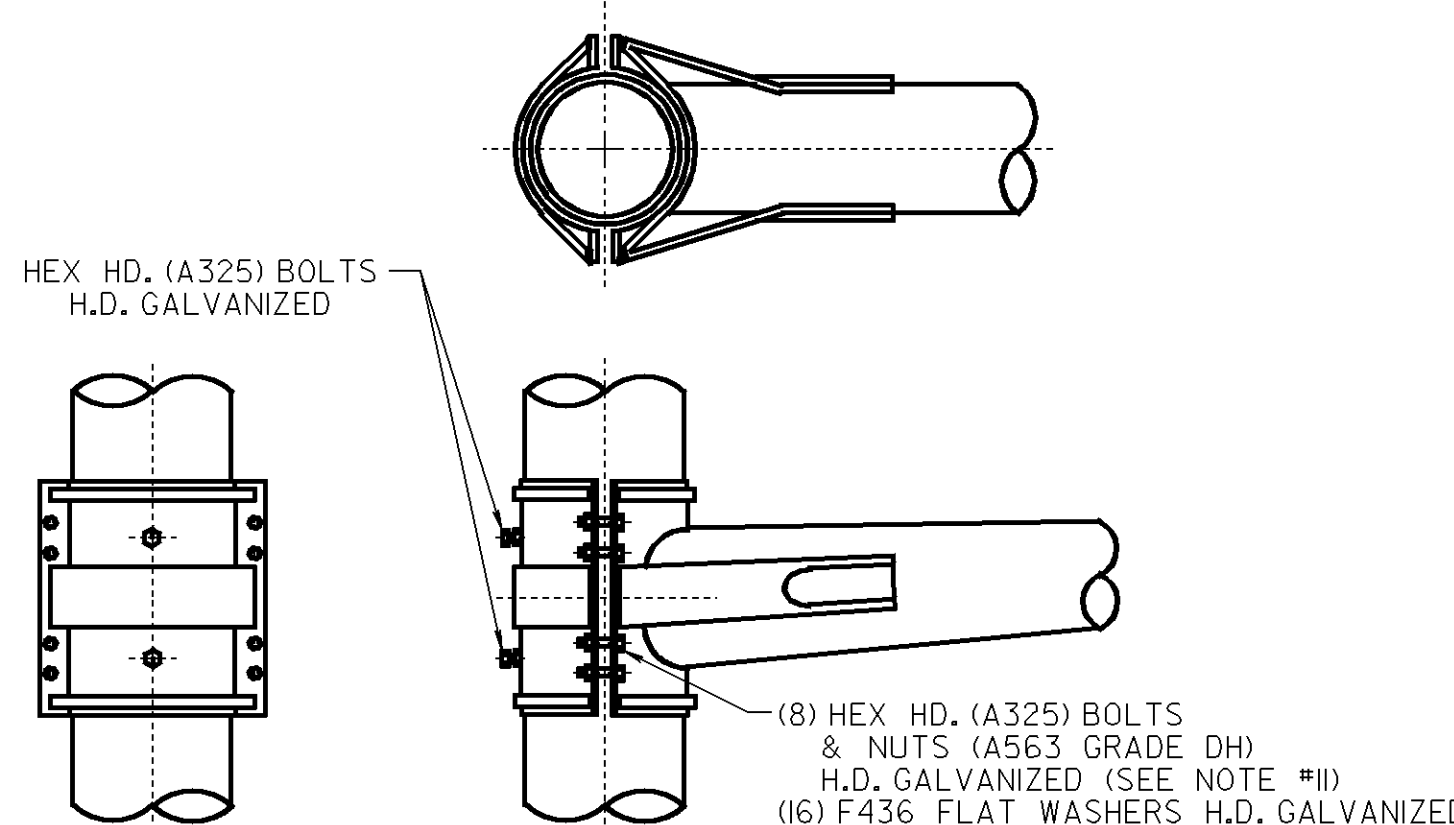
STEEL TRAFFIC SIGNAL STANDARD & ARM DETAIL - ROUND OR MULTISIDED



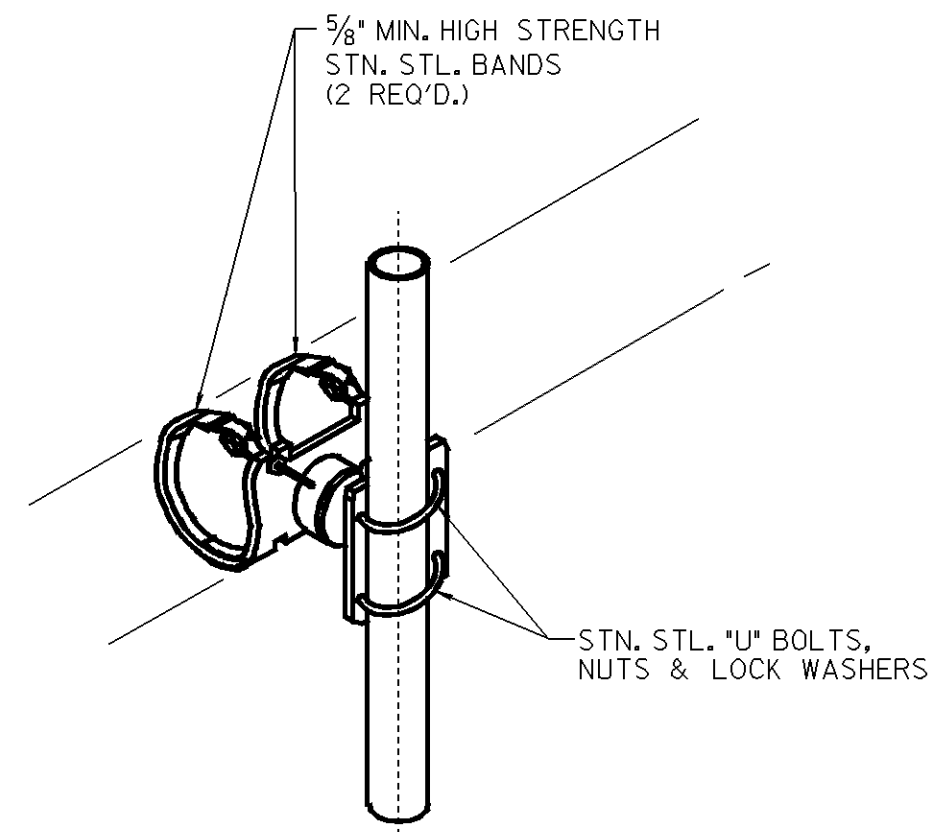
DETAIL 'A



BASE DETAIL

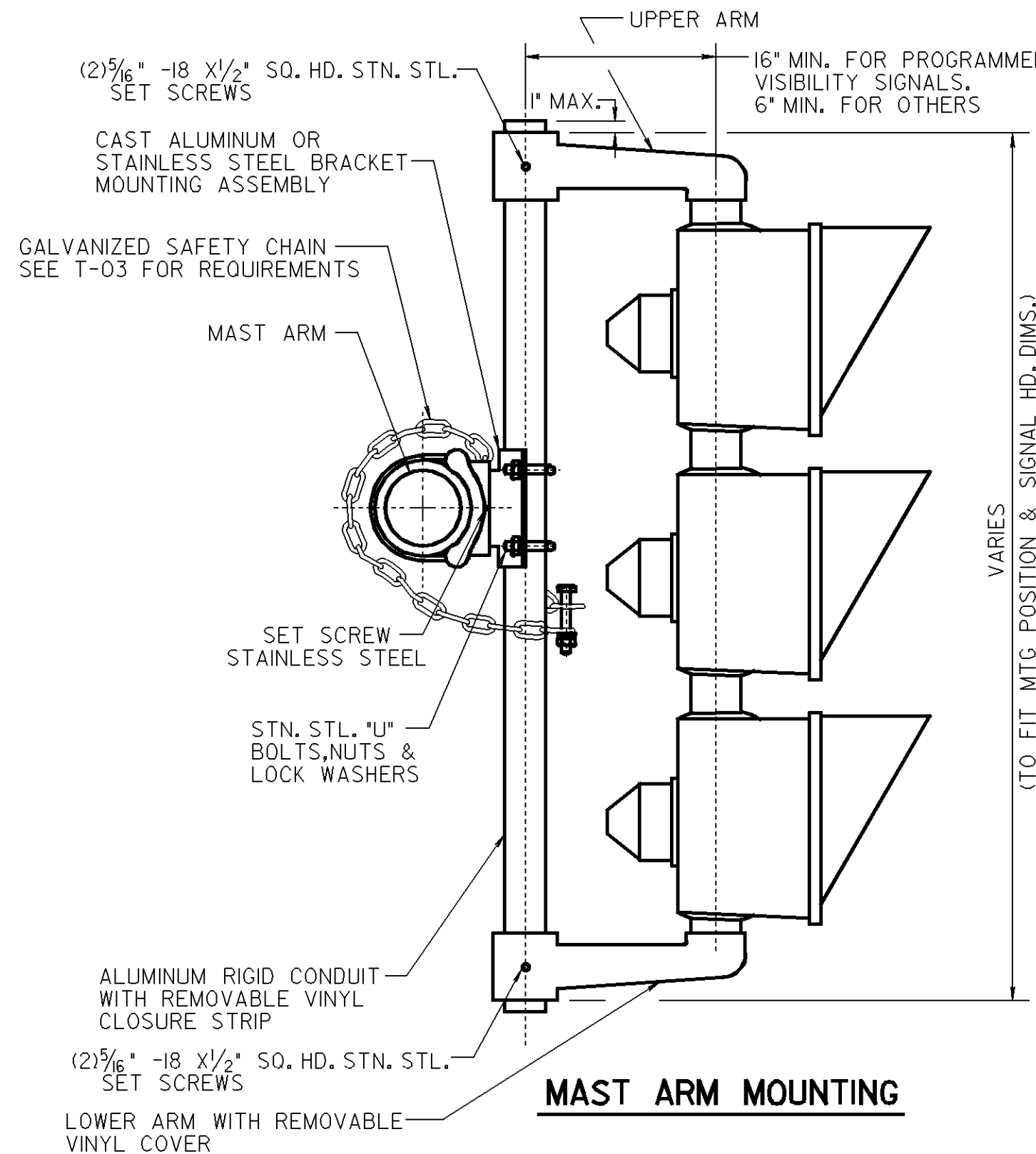


ARM CONNECTION DETAIL

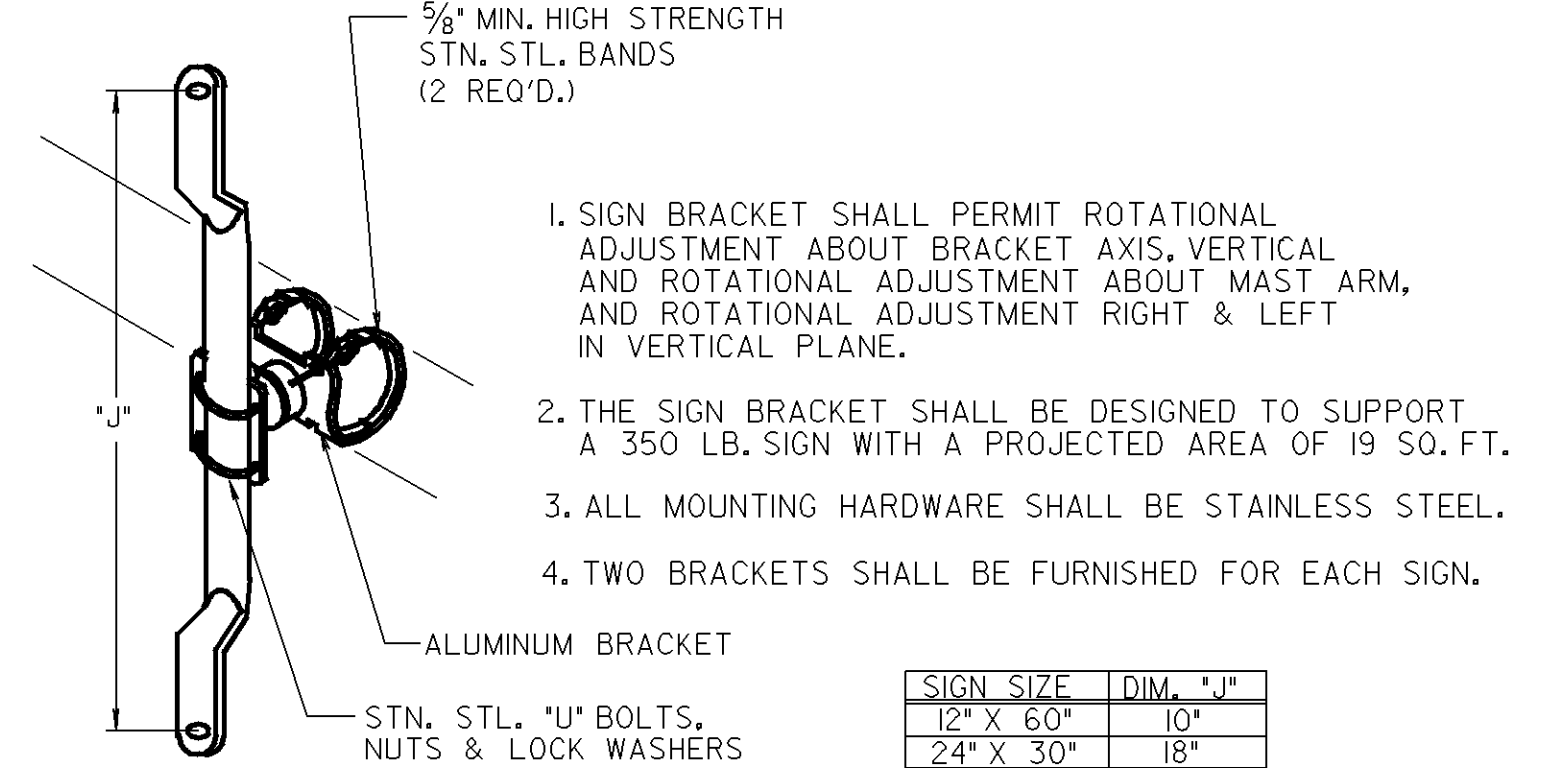


NOTES:

A. ALL HARDWARE SHALL BE STN. STL. EXCEPT AS NOTED



MAST ARM MOUNTING



ALUMINUM SIGN BRACKET DETAIL

NOTES:

1. ALL POLES AND MAINT ARM SHALL BE HOT DIPPED GALVANIZED STEEL. FINISH IN ACCORDANCE WITH SPECIFICATIONS ASTM A123.
2. STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE 1996 (16th EDITION) AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, INCLUDING INTERIMS, THE 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNAL, INCLUDING INTERIMS, AND THE 1987 NEW JERSEY DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, WITH MODIFICATIONS.
3. ARMS WILL SUPPORT THE FOLLOWING (MAXIMUM LOADING):
 - FIXED SIGNALS BACK-TO-BACK AT THE END OF ARM, TOTAL WT. = 100 LBS., PROJ. AREA = 8.4 S.F.
 - FIXED SIGNALS BACK-TO-BACK AT A MINIMUM DISTANCE OF 1/3 THE ARM LENGTH FROM THE END, TOTAL WT. = 100 LBS. PROJ. AREA = 8.4 S.F.
 - FIXED SIGN (MAX. DEPTH = 2.0 FT.) MIDWAY BETWEEN SIGNALS, WT. = 70 LBS., PROJ. AREA = 12 S.F.
4. POLE WILL SUPPORT TWO MAST ARMS, ONE 45 FT. AND ONE 30 FT. IN LENGTH (MAX.) WITH THE ABOVE LOADING ON EACH ARM AND A MINIMUM ARM SEPARATION ANGLE OF 45° OR ONE ARM WITH A MAXIMUM LENGTH OF 65' WITH THE ABOVE LOADING.
5. SIZE OF ARM SUPPLIED SHALL BE NOTED ON PLAN SHEET OR BID PROPOSAL.
6. ALL POLES AND ARMS MUST BE ROUND OR MULTISIDED. (MINIMUM 8 SIDED).
7. CLAMP FOR ALL MAST ARMS MUST BE CAPABLE OF ACCOMMODATING VARIOUS POLE DIAMETERS (9.7" TO 10.2") WITHOUT AFFECTING LOAD CHARACTERISTICS OF ASSEMBLED UNIT. ALL CLAMPS MUST BE DESIGNED FOR ATTACHMENT TO ROUND OR MULTISIDED POLES. CLAMP MUST BE CAPABLE OF ROTATIONAL ADJUSTMENT RIGHT AND LEFT FROM VERTICAL PLANE AND 360° ROTATIONAL ADJUSTMENT ABOUT MAST ARMS.
8. THE ARM LOCATION SHALL BE DETERMINED IN THE FIELD TO PROVIDE A ROADWAY CLEARANCE OF 15'-6" MIN. TO 17'-4" MAX. TO ALL INDICATIONS. THE RESIDENT ENGINEER SHALL DETERMINE WHICH ARM SHALL BE MOUNTED AT THE TOP POSITION TO PROVIDE THE PROPER CLEARANCE.
9. ALL INDICATIONS SHALL BE SET PLUMB AND AT THE SAME ELEVATION.
10. CERTIFICATION BY A LICENSED PROFESSIONAL ENGINEER SHALL BE SUPPLIED WHICH INCLUDES DESIGN CALCULATIONS THAT POLE AND ARM DESIGN MEETS ALL SPECIFIED LOADING REQUIREMENTS.
11. ALL HEX NUTS, A563 GRADE DH, SHALL BE INSTALLED BY "TURN OF THE NUT METHOD", SEAT NUT, THEN TORQUE MINIMUM 1/2 TURN.
12. ANCHOR BOLTS, LOCK WASHERS, FLAT WASHERS, NUTS, AND LEVELING NUTS SHALL BE SUPPLIED WITH EACH POLE. LEVELING NUTS SHALL BE ASTM A307.

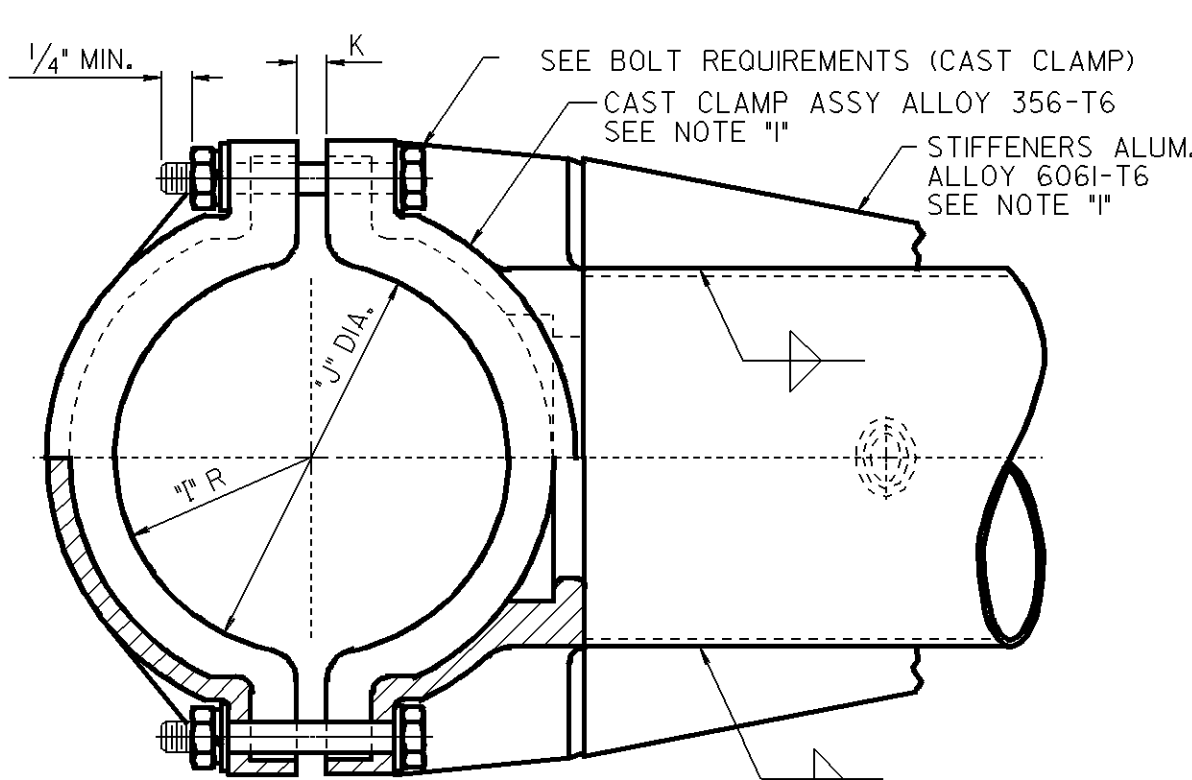
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

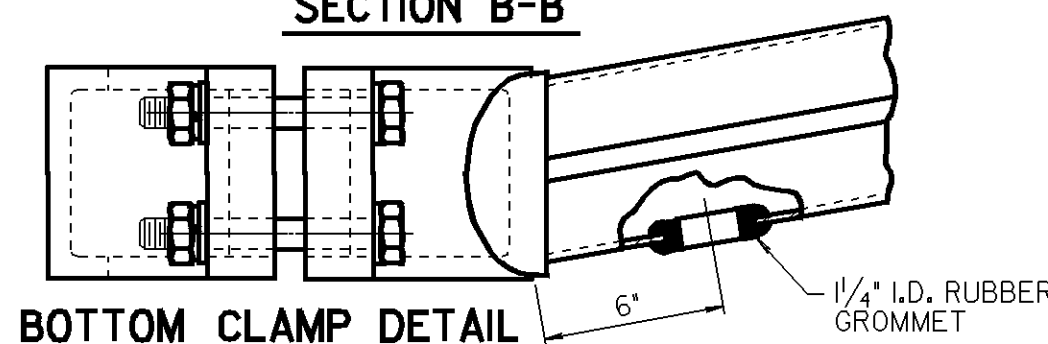
N.T.S.

STEEL TRAFFIC SIGNAL POLE
AND ARM DETAILS

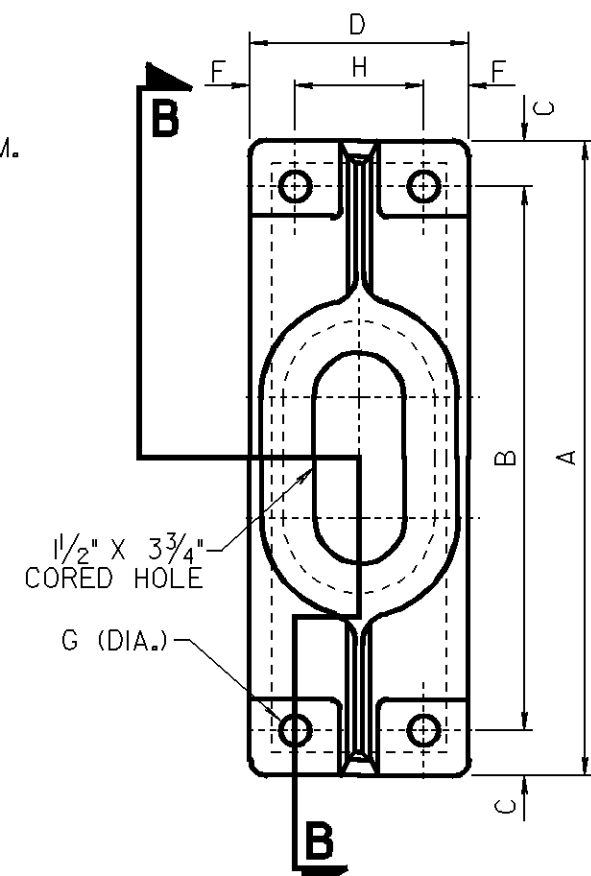
T-1101



SECTION B-B



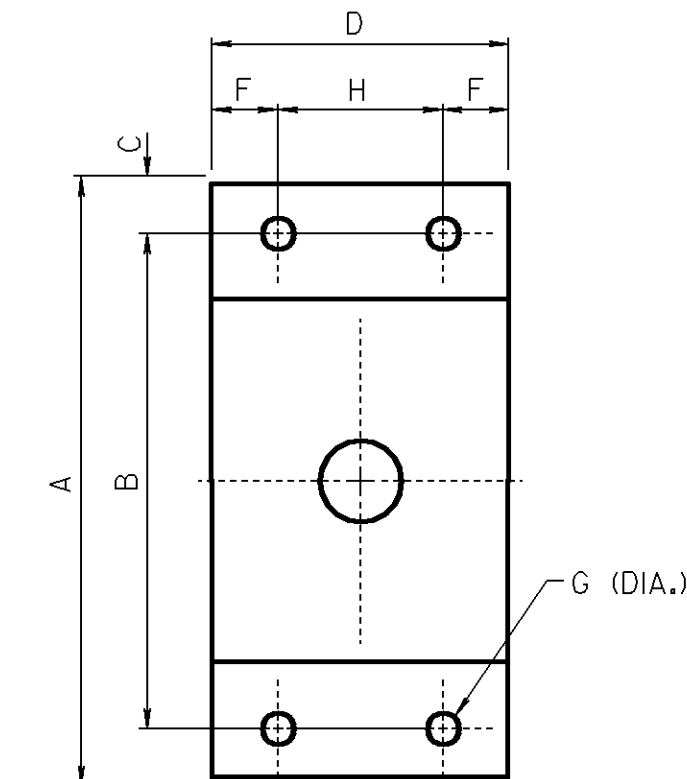
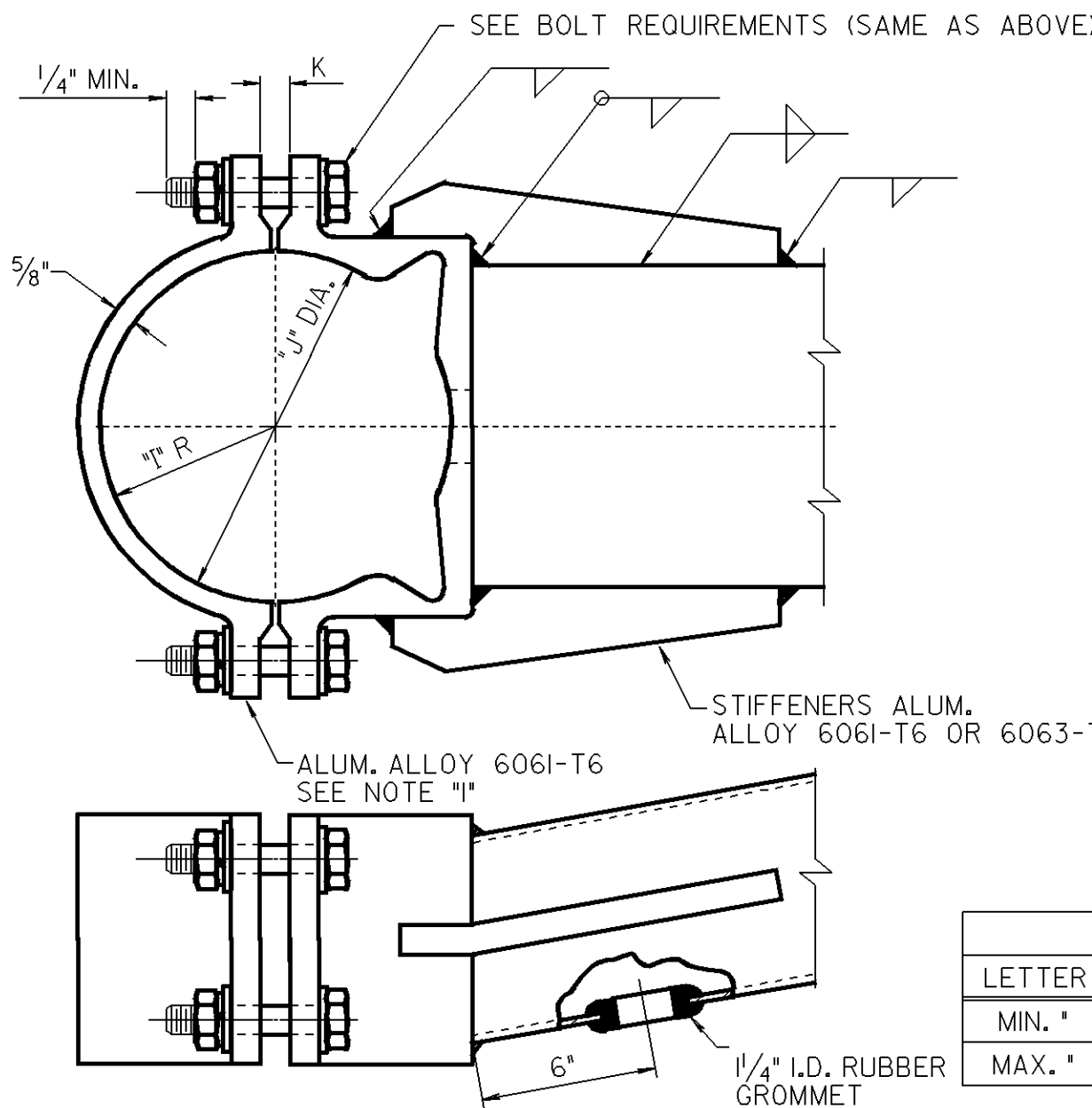
BOTTOM CLAMP DETAIL
ALUM. ALLOY 356-T6
MIN. DRAFT WHERE REQUIRED



CAST CLAMP

BOLT REQUIREMENTS

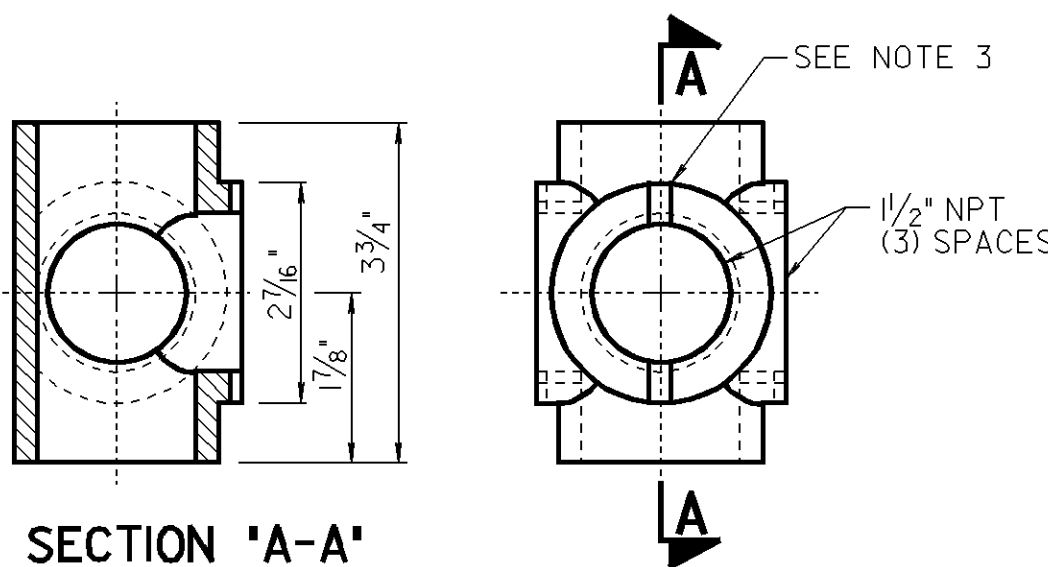
- 8 - 5/8" Ø STN. STL. HEX HD. BOLTS, ASTM A193 GRADE B8
- 16 - 5/8" Ø STN. STL. FLAT WASHERS
- 8 - 5/8" Ø STN. STL. LOCK WASHERS
- 8 - 5/8" Ø STN. STL. HEX NUTS



ALTERNATE EXTRUDED CLAMP

BOLT REQUIREMENTS
SAME AS CAST CLAMP

DIMENSION CHART - CAST & EXTRUDED CLAMP											
LETTER	A	B	C	D	E	F	G	H	I	J	K
MIN. "	9 1/4	7 7/8	5/8	4 1/2	-	3/4	1 1/16	2 1/8	3 3/32	6 1/16	1 1/2
MAX. "	10 1/2	8 5/16	7/8	5	-	1 1/16	1 1/16	3	3 3/32	6 1/16	1 1/2



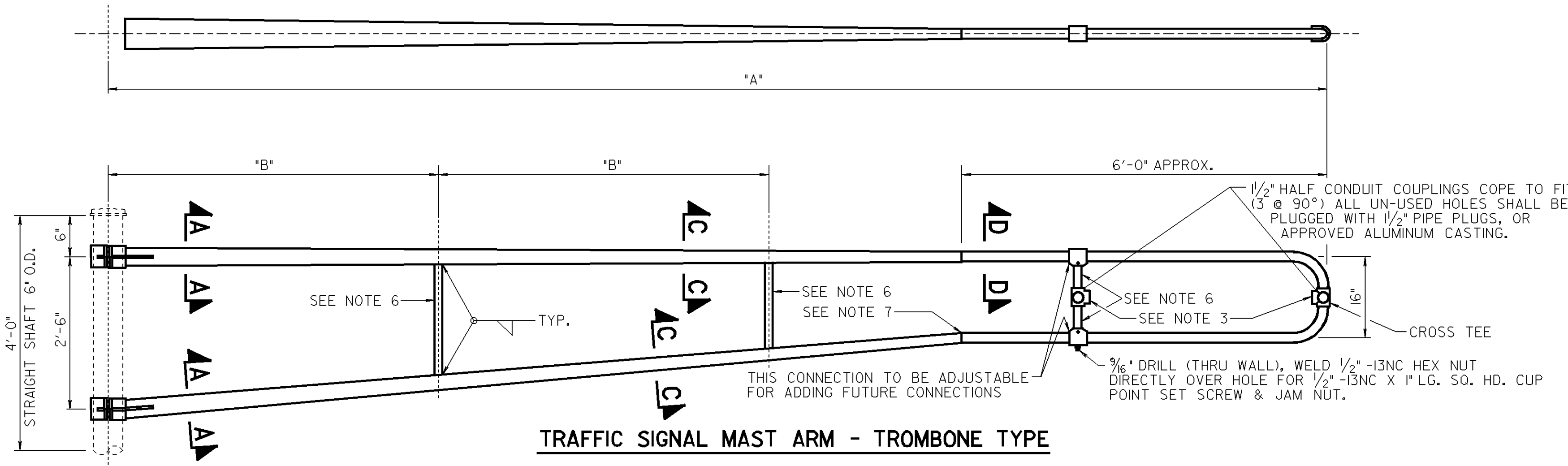
SECTION 'A-A'

CROSS TEE

MATERIAL: ALUMINUM ALLOY 365-T6

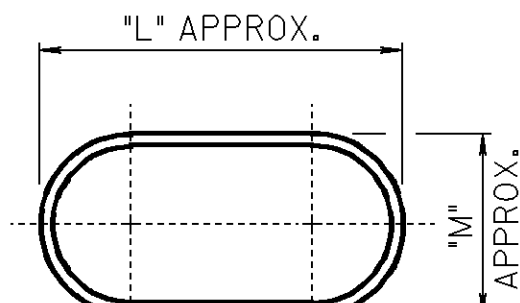
GENERAL NOTES

- AN EXTRUDED CLAMP MAY BE SUPPLIED AS AN ALTERNATE TO THE CAST BAND INDICATED. GENERAL CONFIGURATION MUST BE SIMILAR AND STIFFENERS MUST BE INSTALLED AS INDICATED. STRENGTH OF ASSEMBLED ARM WITH EXTRUDED CLAMPS MUST EQUAL OR EXCEED CAST CLAMP CONSTRUCTION. EXTRUSION ALLOY 6005-T5 OR 6061-T6.
- UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.
- PROVIDE SLOTS OR SERRATIONS IN FACE OF ELBOW AND CROSS TEE. SLOTS TO BE 3/32" DEEP X 3/16" WIDE. SERRATIONS TO MATCH HOUSING TO ALLOW 5° ADJUSTMENT.
- WHEN THE CONTRACT PLANS REQUIRE THE INSTALLATION OF OPTICALLY PROGRAMMED TRAFFIC SIGNALS THE 1/2" NIPPLE SHALL BE MINIMUM OF 14" LONG.
- MAST ARM WILL BE INSTALLED ON NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD ALUMINUM TRAFFIC SIGNALS POLE CONFORMING TO DRAWING NO. T-03 WITH TRANSFORMER BASE DRAWING NO. T-02.
- 1/2" SCHEDULE 40 PIPE ALUMINUM ALLOY 6063-T6.
- JOINTS WILL BE PERMITTED TO PROVIDE THE NECESSARY TAPER. THE MANUFACTURER SHALL DETERMINE THE LOCATION. THE JOINT SHALL PROVIDE FOR A MINIMUM OVERLAP OF 6" AND SHALL NOT INTERFERE WITH THE ADJUSTABLE MEMBER.

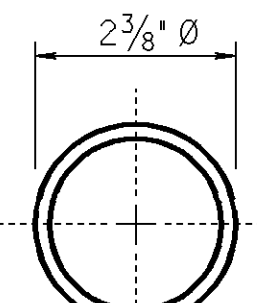


TRAFFIC SIGNAL MAST ARM - TROMBONE TYPE

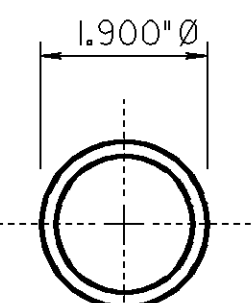
MINIMUM TUBING SIZE	*A*	*B*	ALTERNATE		*B*
			NO. OF STRUTS	NO. OF STRUTS	
3 1/2" O.D. X .125" WALL 6063-T6 ALUM. ALLOY "L" = 4 3/8" "M" = 2 3/8"	8'-0"	2'-4"	1		
	10'-0"	3'-4 1/2"	1	2	3'-6"
	12'-0"	4'-5"	1		
	14'-0"	5'-4 1/2"	1		
5" O.D. X .125" WALL 6063-T6 ALUM. ALLOY "L" = 6 1/2" "M" = 3"	15'-0"	5'-11"	1	3	4'-6"
	16'-0"	6'-5"	1		
	18'-0"	4'-10"	2		
	20'-0"	5'-5"	2	4	4'-4"
	25'-0"	6'-0"	3	5	4'-5"
6" O.D. X .250" WALL 6063-T6 ALUM. ALLOY "L" = 9 1/8" "M" = 4"	30'-0"	7'-7"	3		



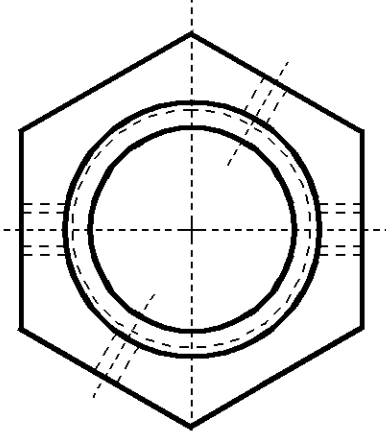
SECTION A-A



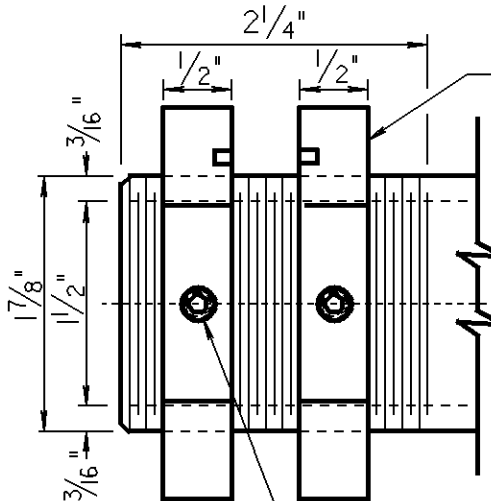
SECTION C-C



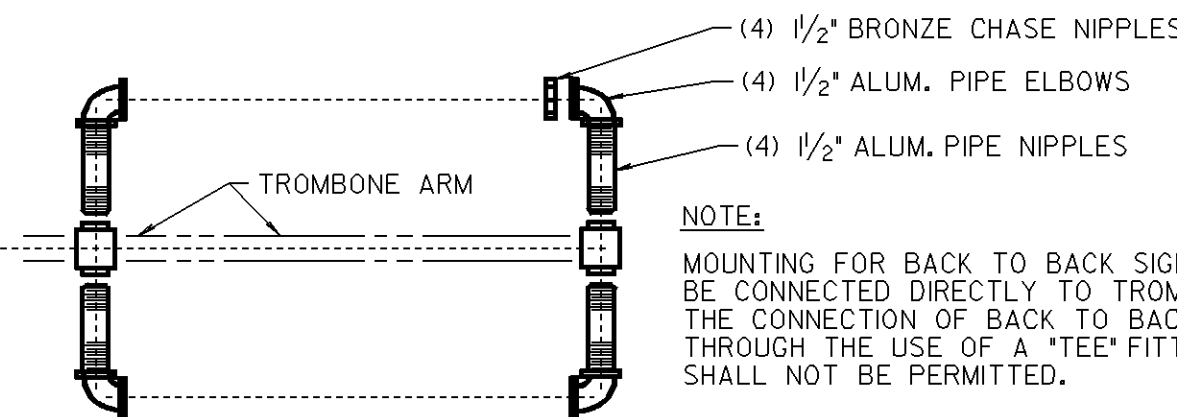
SECTION D-D



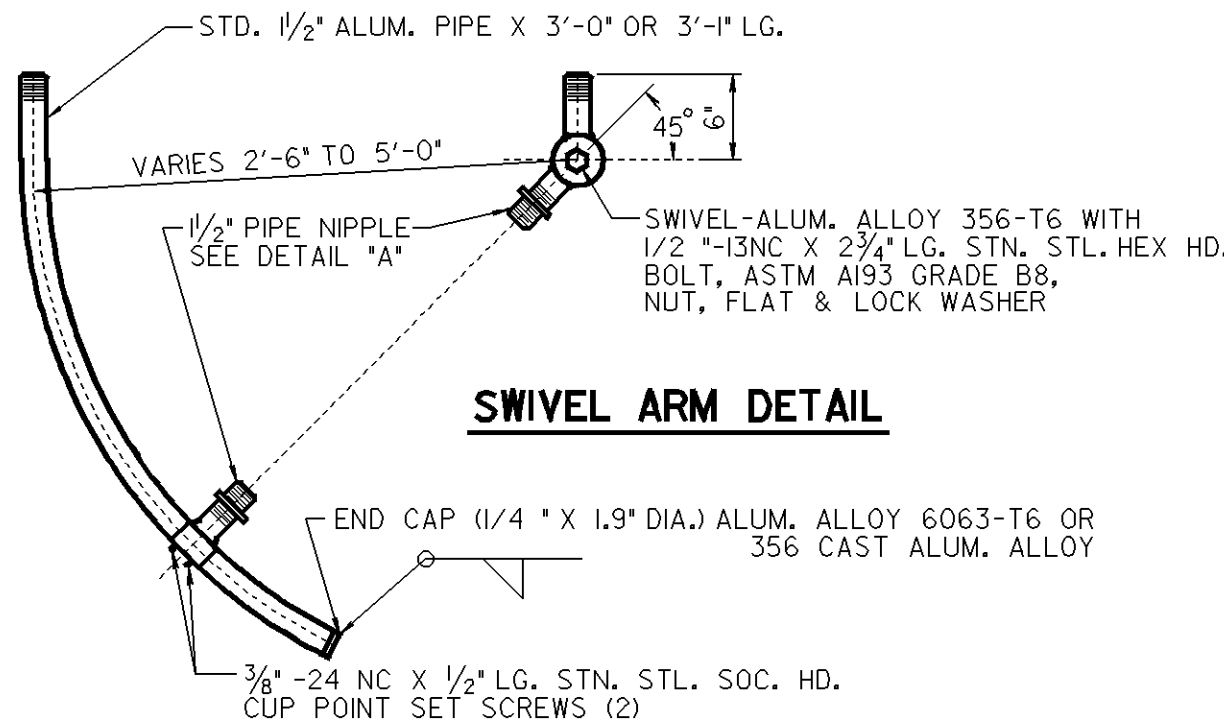
1/4"-20NC STN. STL. SOC. HD. SET SCREWS
ONE ON EACH SIDE OF LOCK NUTS



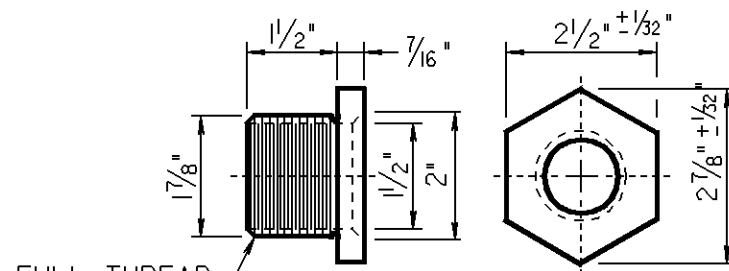
DETAIL 'A'



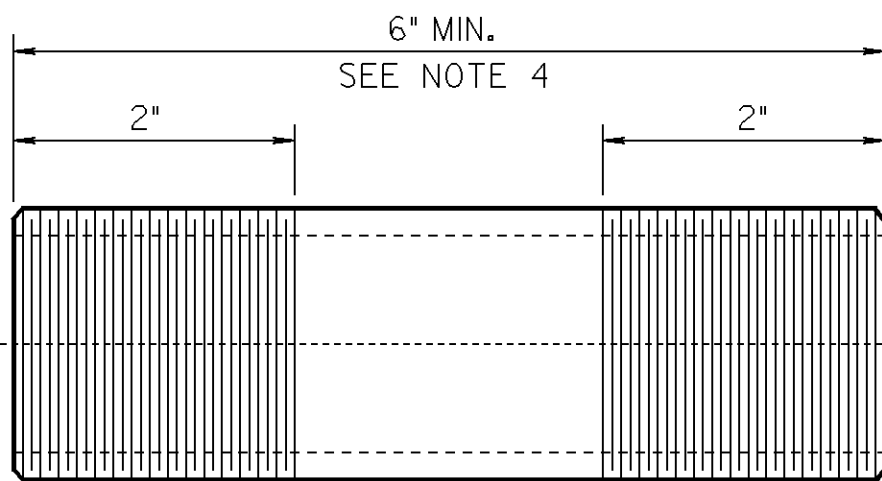
DETAIL FOR BACK TO BACK SIGNALS
TO BE INSTALLED WHERE REQUIRED



SWIVEL ARM DETAIL



STANDARD 1/2" BRONZE CHASE NIPPLE
MATERIAL: BRONZE 85-5-5-5



STANDARD 1/2" X 6" LG. ALUM. NIPPLE
ALLOY 6063-T6

SIGNAL MOUNTING DETAILS
MOUNTING HARDWARE

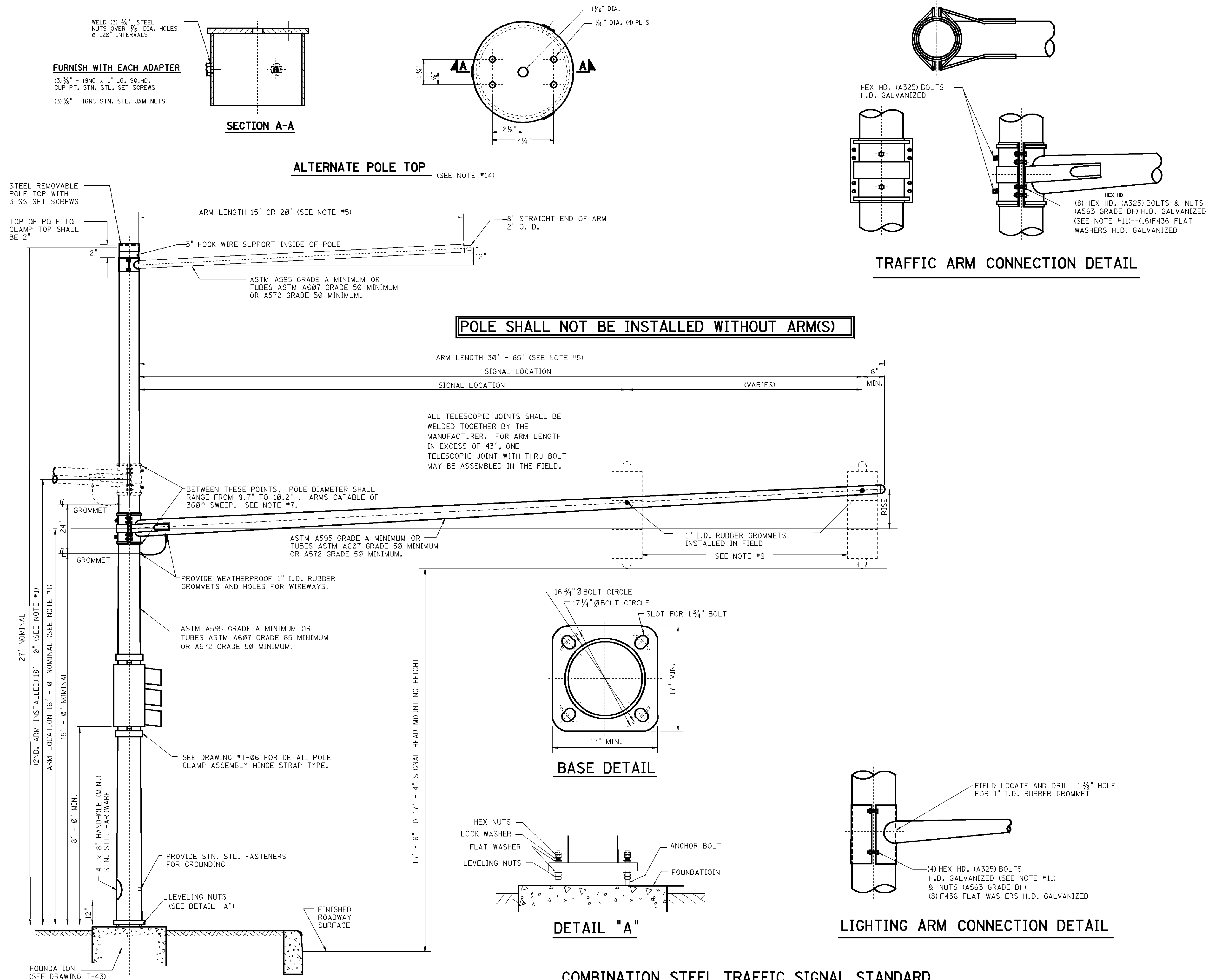
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

TRAFFIC SIGNAL MAST ARM-TROMBONE TYPE
WITH CLAMP DETAIL FOR TYPE *T* & *C* POLES

REFERENCE

BDC 000-002 - ORIGINAL SHEET



NOTES:

- ALL POLES AND MAST ARMS SHALL BE HOT DIPPED GALVANIZED STEEL. FINISH IN ACCORDANCE WITH SPECIFICATIONS ASTM A123.
- STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE 1996 (16TH EDITION) AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, INCLUDING INTERIMS, THE 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNAL, INCLUDING INTERIMS, AND THE 1998 NEW JERSEY DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, SECTION 43.
- TRAFFIC ARMS WILL SUPPORT THE FOLLOWING (MAXIMUM LOADING):
 - FIXED SIGNALS BACK-TO-BACK AT THE END OF ARM, TOTAL WT. = 100 LBS., PROJ. AREA = 8.4 SQ. FT.
 - FIXED SIGNALS BACK-TO-BACK AT A MINIMUM DISTANCE OF 1/3 THE ARM LENGTH FROM THE END, TOTAL WT. = 100 LBS., PROJ. AREA = 8.4 SQ. FT.
 - FIXED SIGN (MAX. DEPTH = 2 FT.) MIDWAY BETWEEN SIGNALS, WT. = 70 LBS., PROJ. AREA = 12 SQ. FT.
 - LIGHTING ARM WILL SUPPORT THE FOLLOWING (MAXIMUM LOADING):
 - FIXED LUMINAIRE (1.4 SQ. FT. AND 20 LBS.)
- POLE WILL SUPPORT ONE LIGHTING ARM 20 FT. AND TWO TRAFFIC MAST ARMS, ONE 45 FT. AND ONE 30 FT. IN LENGTH (MAX.) WITH THE ABOVE LOADING ON EACH ARM AND A MINIMUM ARM SEPARATION ANGLE OF 45°, OR ONE LIGHTING ARM 20 FT. AND ONE TRAFFIC MAST ARM A MAXIMUM LENGTH OF 65 FT. WITH THE ABOVE LOADING.
- SIZE OF ARM(S) SUPPLIED SHALL BE NOTED ON PLAN SHEET OR BID PROPOSAL.
- ALL POLES AND ARMS MUST BE ROUND OR MULTISIDED (MINIMUM 8 SIDED)
- CLAMP FOR ALL MAST ARMS MUST BE CAPABLE OF ACCOMMODATING VARIOUS POLE DIAMETERS (9.2" TO 10.2") WITHOUT AFFECTING LOAD CHARACTERISTICS OF ASSEMBLED UNIT. ALL CLAMPS MUST BE DESIGNED FOR ATTACHMENT TO ROUND OR MULTISIDED POLES. CLAMP MUST BE CAPABLE OF ROTATIONAL ADJUSTMENT RIGHT AND LEFT FROM VERTICAL PLANE AND 360° ROTATIONAL ADJUSTMENT ABOUT MAST ARMS.
- THE ARM LOCATION SHALL BE DETERMINED IN THE FIELD TO PROVIDE A ROADWAY CLEARANCE OF 15' - 6" MIN. TO 17' - 4" MAX. TO ALL TRAFFIC SIGNAL INDICATIONS. THE RESIDENT ENGINEER SHALL DETERMINE WHICH ARM SHALL BE MOUNTED AT THE TOP POSITION TO PROVIDE THE PROPER CLEARANCE.
- ALL INDICATIONS SHALL BE SET PLUMB AND AT THE SAME ELEVATION.
- CERTIFICATION BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER SHALL BE SUPPLIED WHICH INCLUDES DESIGN CALCULATIONS THAT POLE AND ARM DESIGN MEETS ALL SPECIFIED LOADING REQUIREMENTS.
- ALL HEX NUTS, A563 GRADE DH, SHALL BE INSTALLED BY TURN OF THE NUT METHOD, SEAT NUT, THEN TORQUE MINIMUM $\frac{1}{2}$ TURN.
- ANCHOR BOLTS, LOCK WASHERS, FLAT WASHERS, NUTS, AND LEVELING NUTS SHALL BE SUPPLIED WITH EACH POLE. LEVELING NUTS SHALL BE ASTM A307.
- FOR TRAFFIC SIGNAL INDICATION AND SIGN MOUNTING DETAILS SEE T-11.
- ALTERNATE POLE TOP SHALL BE USED WHEN THE PLANS OR SPECIFICATIONS REQUIRE AN OFFSET TYPE LUMINAIRE.
- THE MANUFACTURER'S SHOP SHALL BE AISC CERTIFIED, CATEGORY I, CONVENTIONAL STEEL STRUCTURES AND SIMPLE BRIDGES.
- THE MATERIAL FOR THE ALTERNATE POLE TOP SHALL BE THE SAME AS THE POLE.

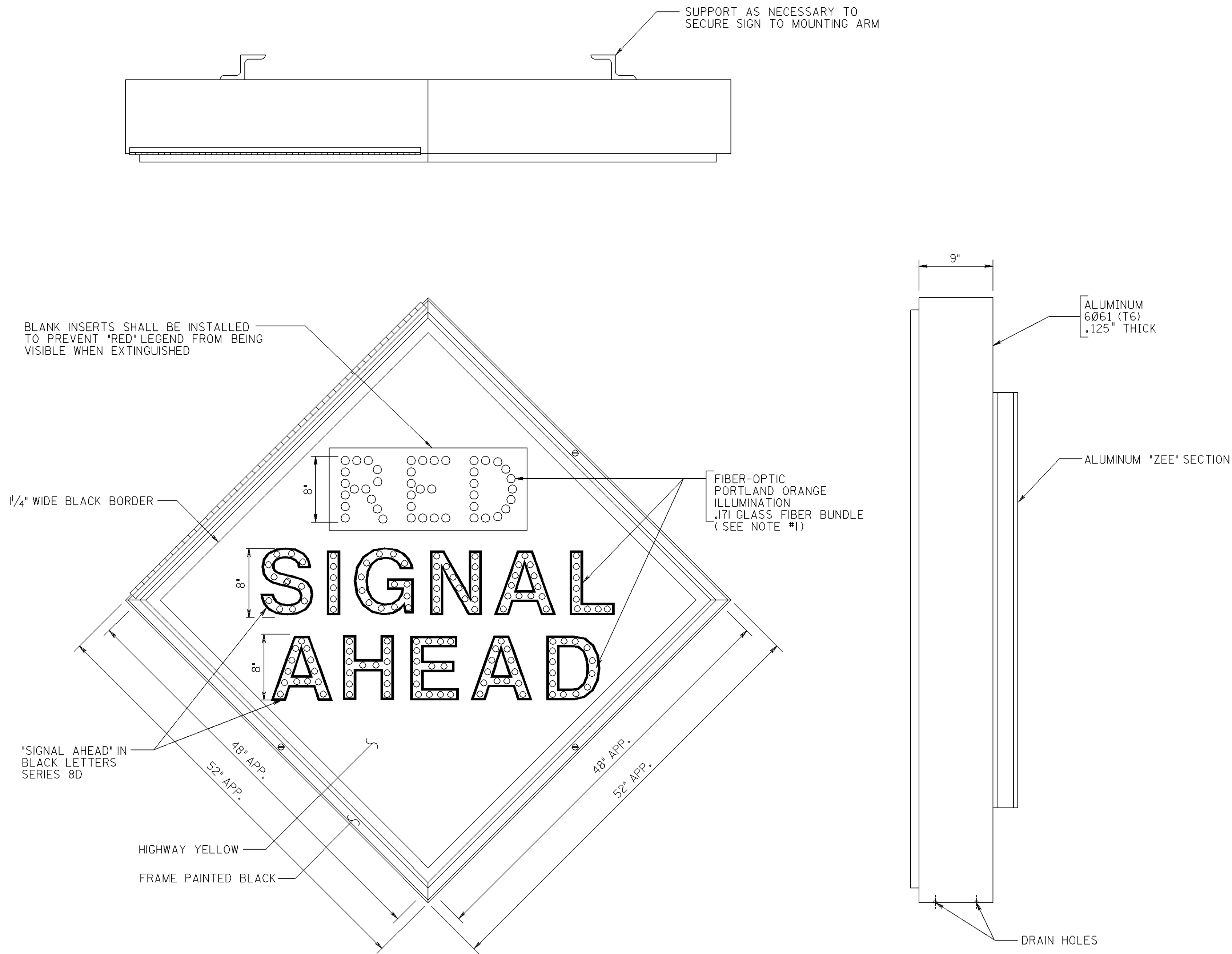
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

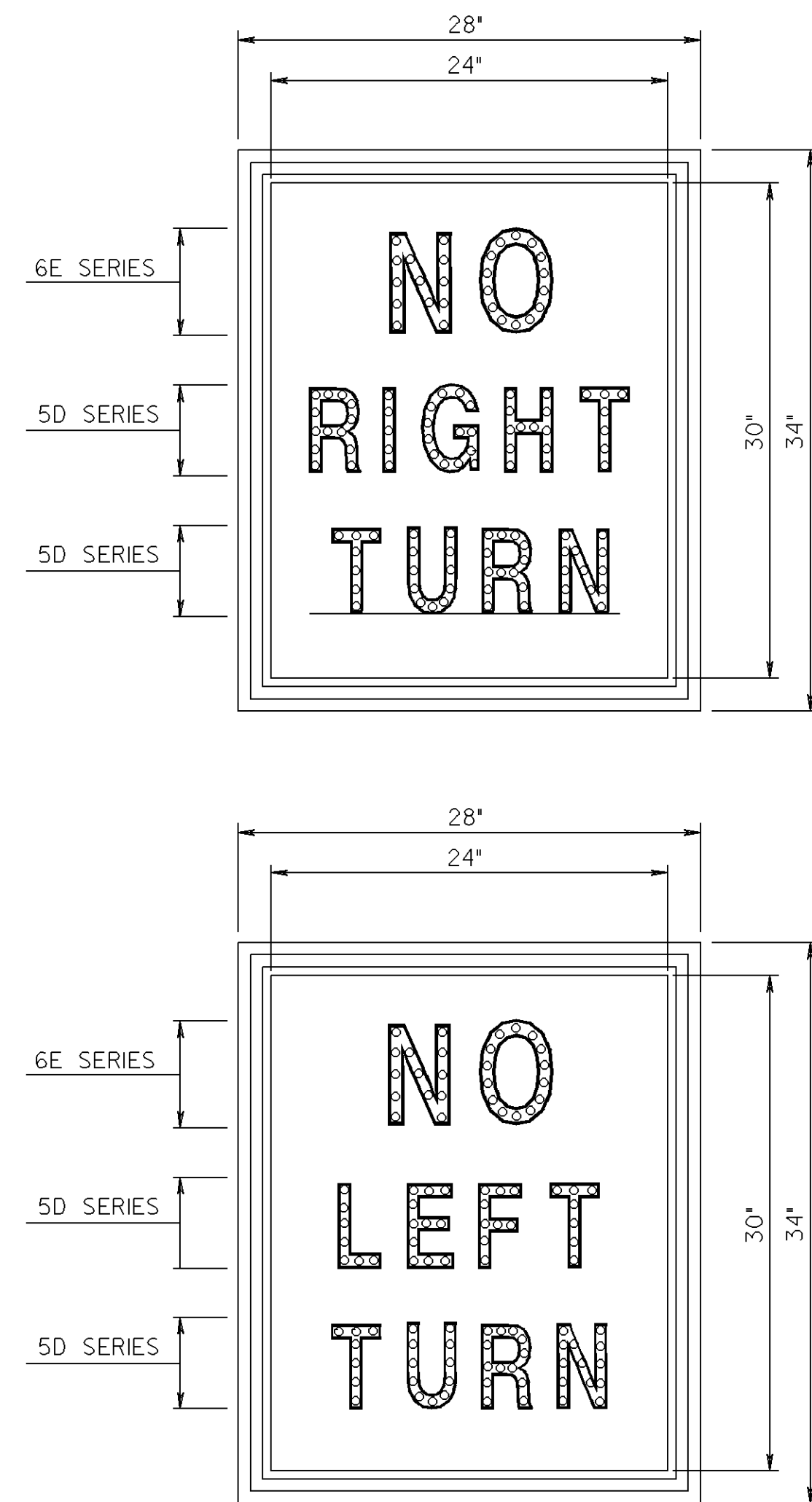
N.T.S.

TRAFFIC SIGNAL STANDARD, TYPE SC
AND ARM ASSEMBLY DETAILS

T-1301



TYPICAL FIBER-OPTIC BLANKOUT SIGNS



NOTES:

- "SIGNAL AHEAD" CONTINUOUSLY LIT. "SIGNAL AHEAD" AND "RED" SHALL FLASH ALTERNATELY DURING FLASH OPERATION. FLASHING OPERATION TO BEGIN PRIOR TO TERMINATION OF HIGHWAY GREEN AS SPECIFIED.
- MINIMUM OF 2 LAMPS REQUIRED FOR EACH LINE OF LEGEND.
- FIBER-OPTIC BUNDLES TO BE ARRANGED UTILIZING BIFURCATED COMBED RANDOMIZATION.
- SIGN CASE SHALL BE FULLY GASKETED AND WATERTIGHT.
- HINGE AND ALL HARDWARE SHALL BE STAINLESS STEEL.
- FOR INSTALLATION ON STEEL POLE SEE DRAWING NO. T-34.

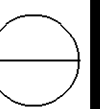
NEW JERSEY DEPARTMENT OF TRANSPORTATION

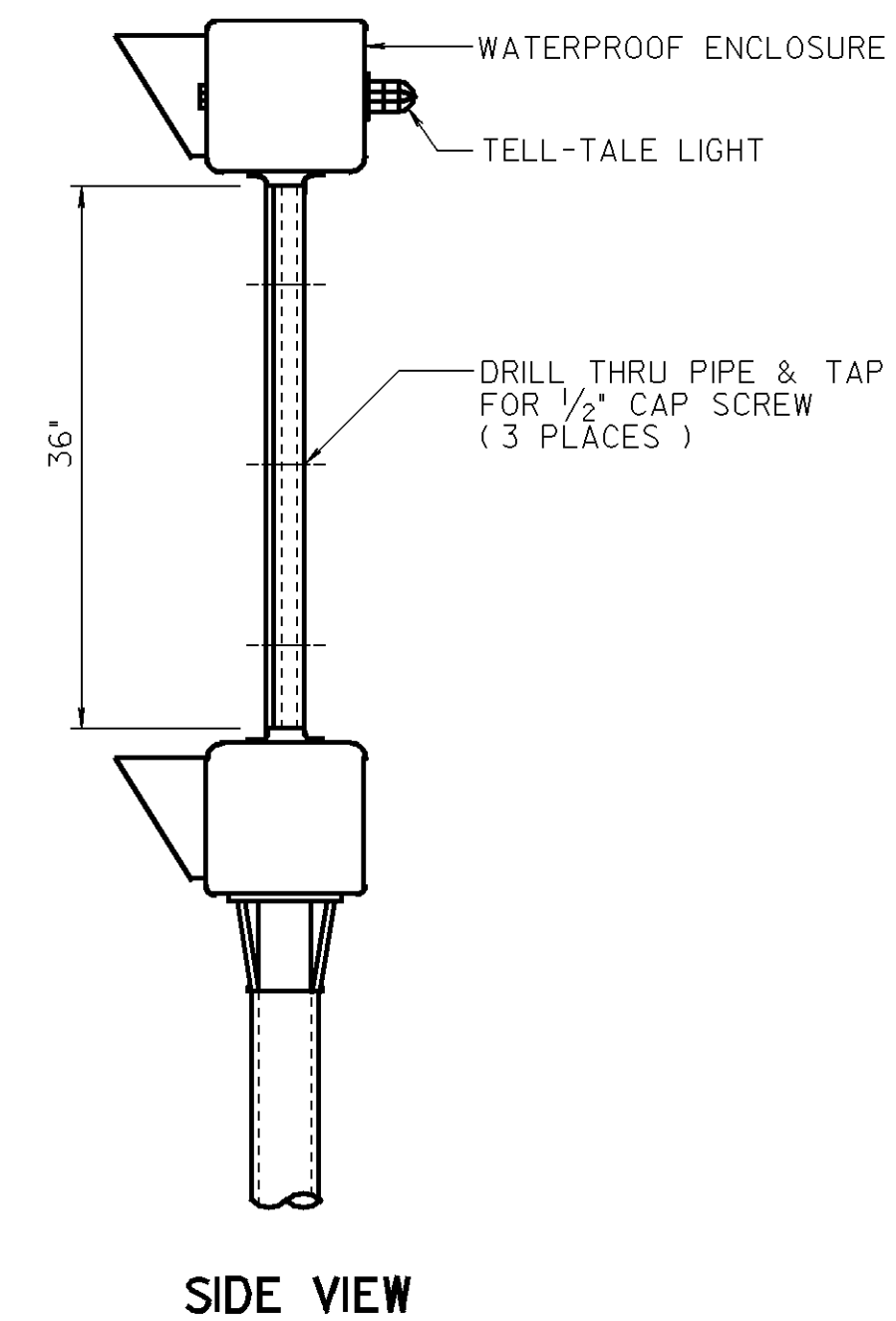
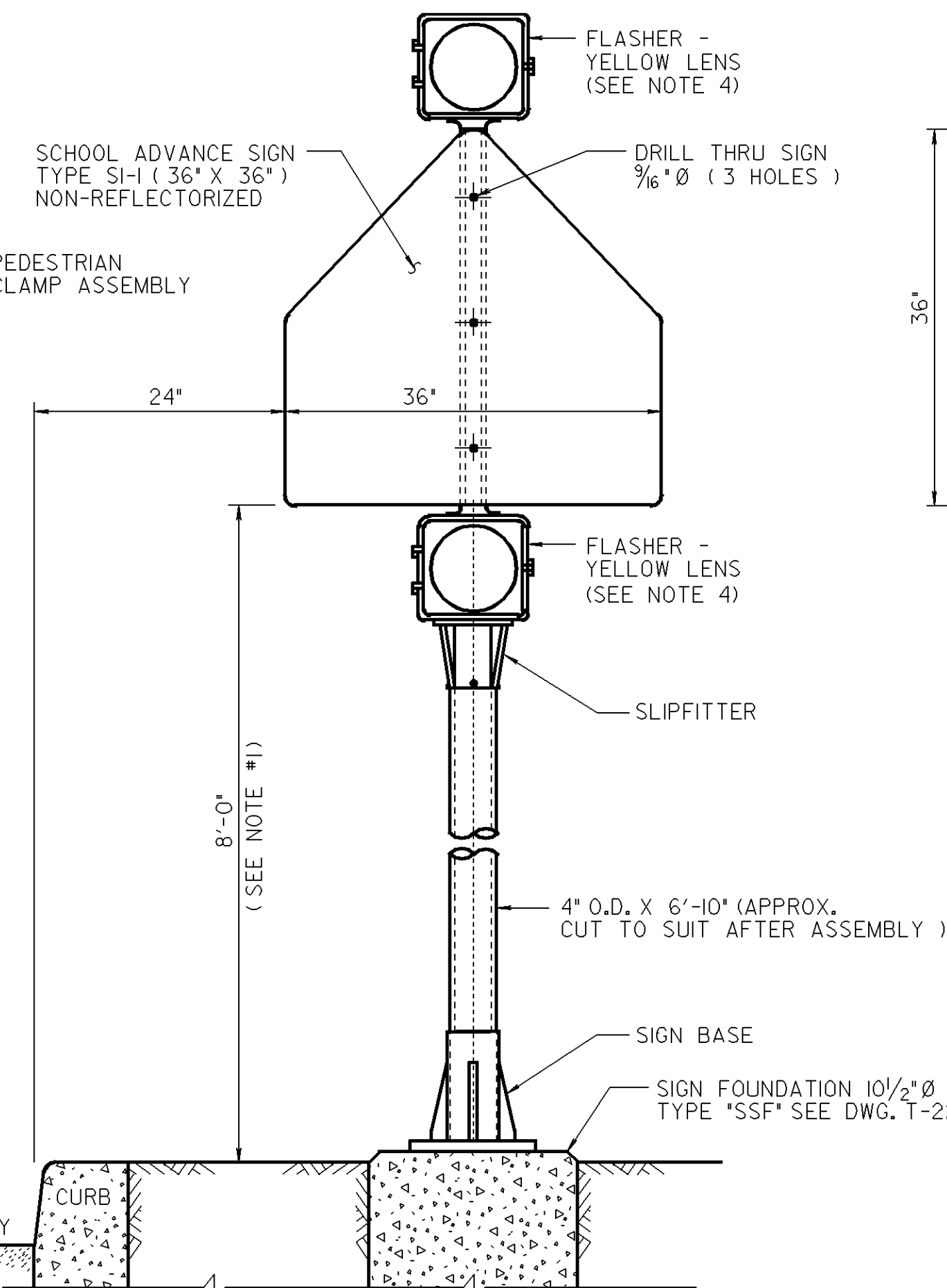
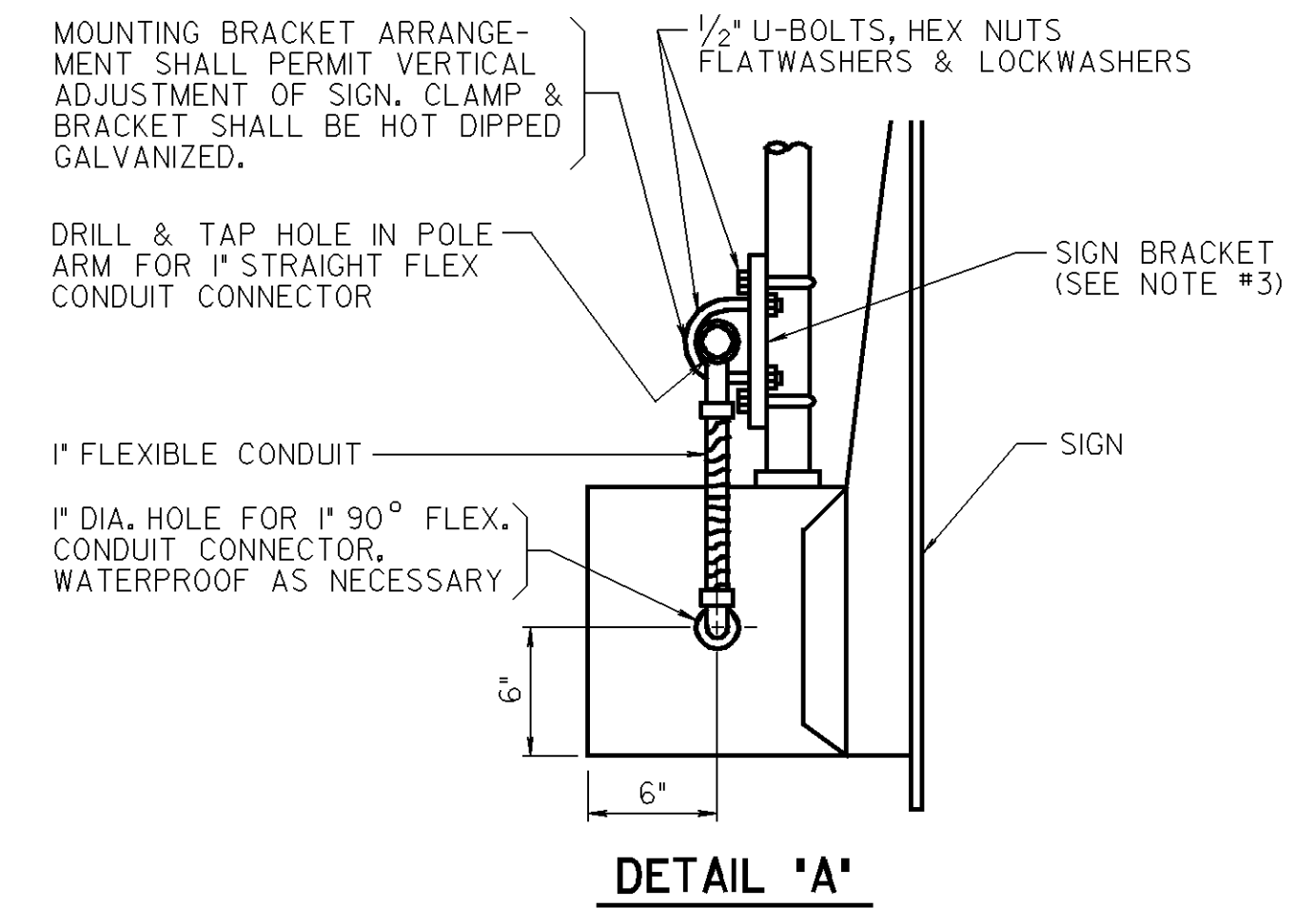
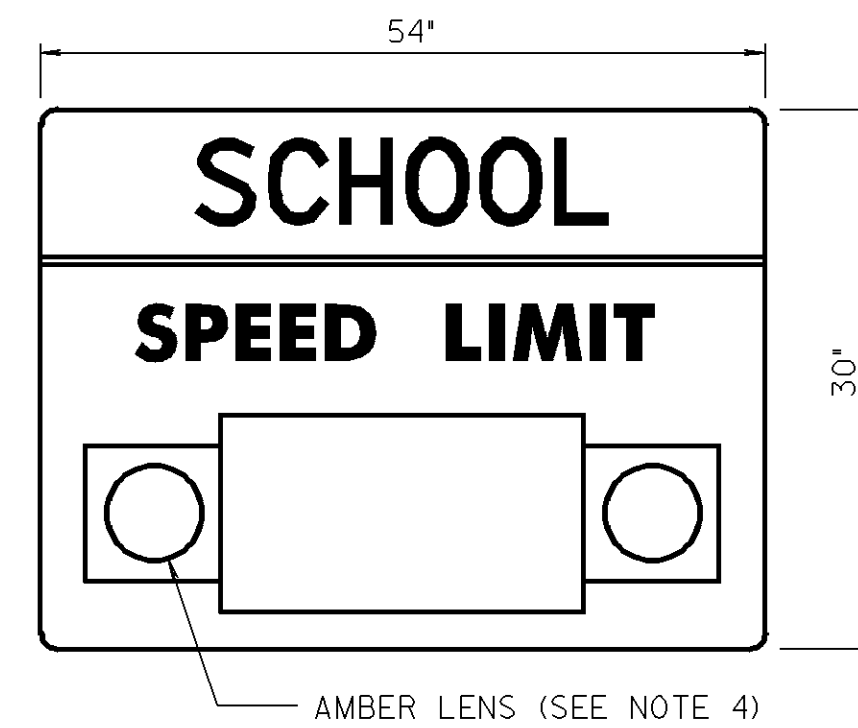
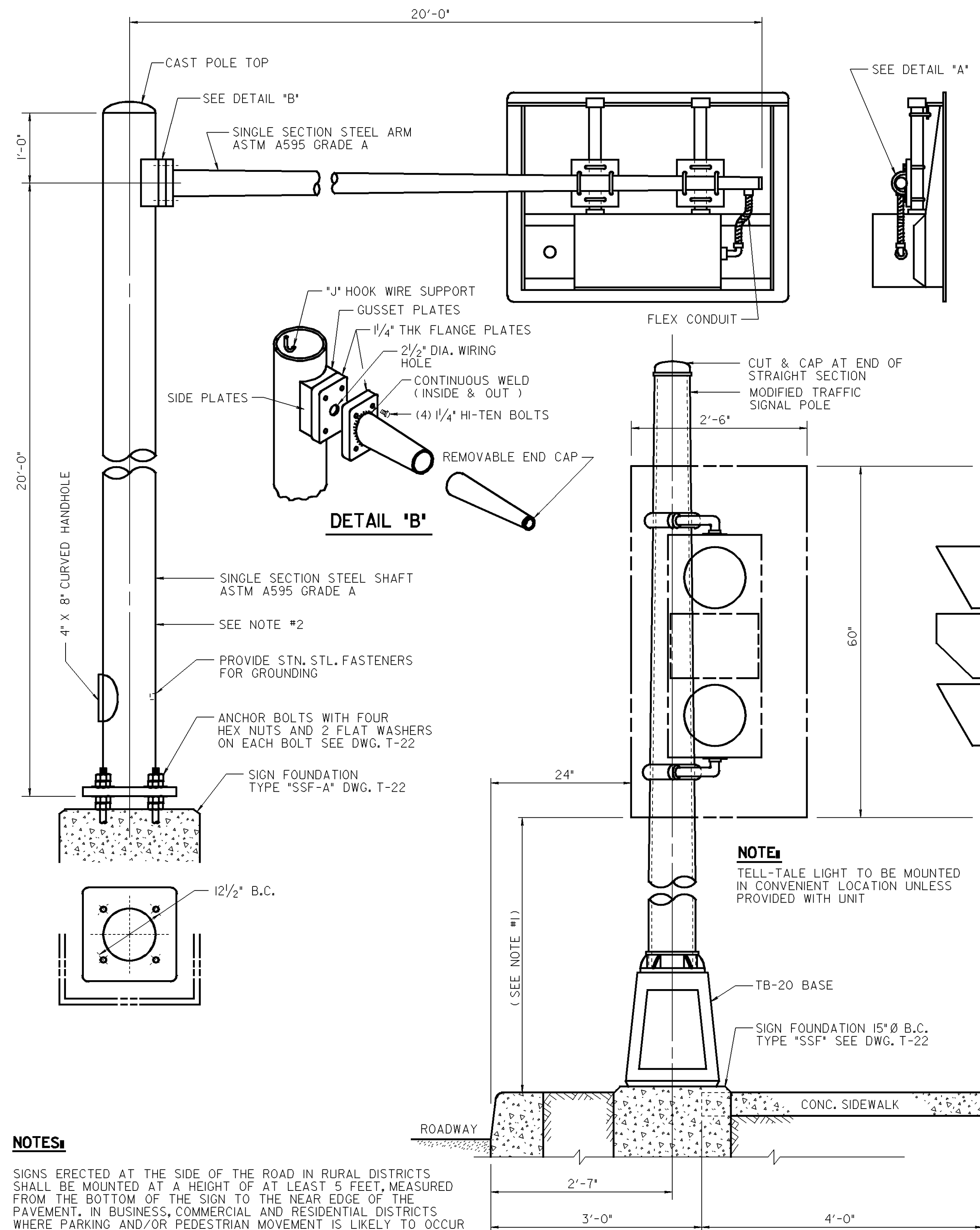
ELECTRICAL DETAILS

N.T.S.

"RED SIGNAL AHEAD" SIGN
(FIBER OPTICS)

T-1401





NOTES

1. SIGNS ERECTED AT THE SIDE OF THE ROAD IN RURAL DISTRICTS SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT. IN BUSINESS, COMMERCIAL AND RESIDENTIAL DISTRICTS WHERE PARKING AND/OR PEDESTRIAN MOVEMENT IS LIKELY TO OCCUR OR WHERE THERE ARE OTHER OBSTRUCTIONS TO VIEW, THE CLEARANCE TO THE BOTTOM OF THE SIGN SHALL BE AT LEAST 7 FEET. THE HEIGHT TO THE BOTTOM OF A SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN MAY BE 1 FOOT LESS THAN THE APPROPRIATE HEIGHT SPECIFIED ABOVE.
2. POLE AND ARM SHALL BE HOT DIPPED GALVANIZED ASTM A123. POLE AND ARM SHALL BE DESIGNED TO SUPPORT A 4' X 4' 250 LB. SIGN-80 M.P.H. 1.3 GUST FACTOR. DESIGN AND FABRICATION TO BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS.
3. SIGN BRACKETS, MAST ARM HARDWARE AND ANCHOR BOLTS AND NUTS SHALL BE SUPPLIED WITH THE POLE AND ARM.
4. FOR FLASHER SIZE, SEE ELECTRICAL PLANS.


2. POLE AND ARM SHALL BE HOT DIPPED GALVANIZED ASTM A123. POLE AND ARM SHALL BE DESIGNED TO SUPPORT A 4' X 4' 250 LB. SIGN-80 M.P.H. 1.3 GUST FACTOR. DESIGN AND FABRICATION TO BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS.

3. SIGN BRACKETS, MAST ARM HARDWARE AND ANCHOR BOLTS AND NUTS SHALL BE SUPPLIED WITH THE POLE AND ARM.

4. FOR FLASHER SIZE, SEE ELECTRICAL PLANS.

FLASHING SCHOOL
SPEED LIMIT SIGN

FLASHING SCHOOL ADVANCE SIGN

NEW JERSEY DEPARTMENT OF TRANSPORTATION	
ELECTRICAL DETAILS N.T.S.	
DETAILS FOR FLASHING SCHOOL SIGNS	
	T-1501 

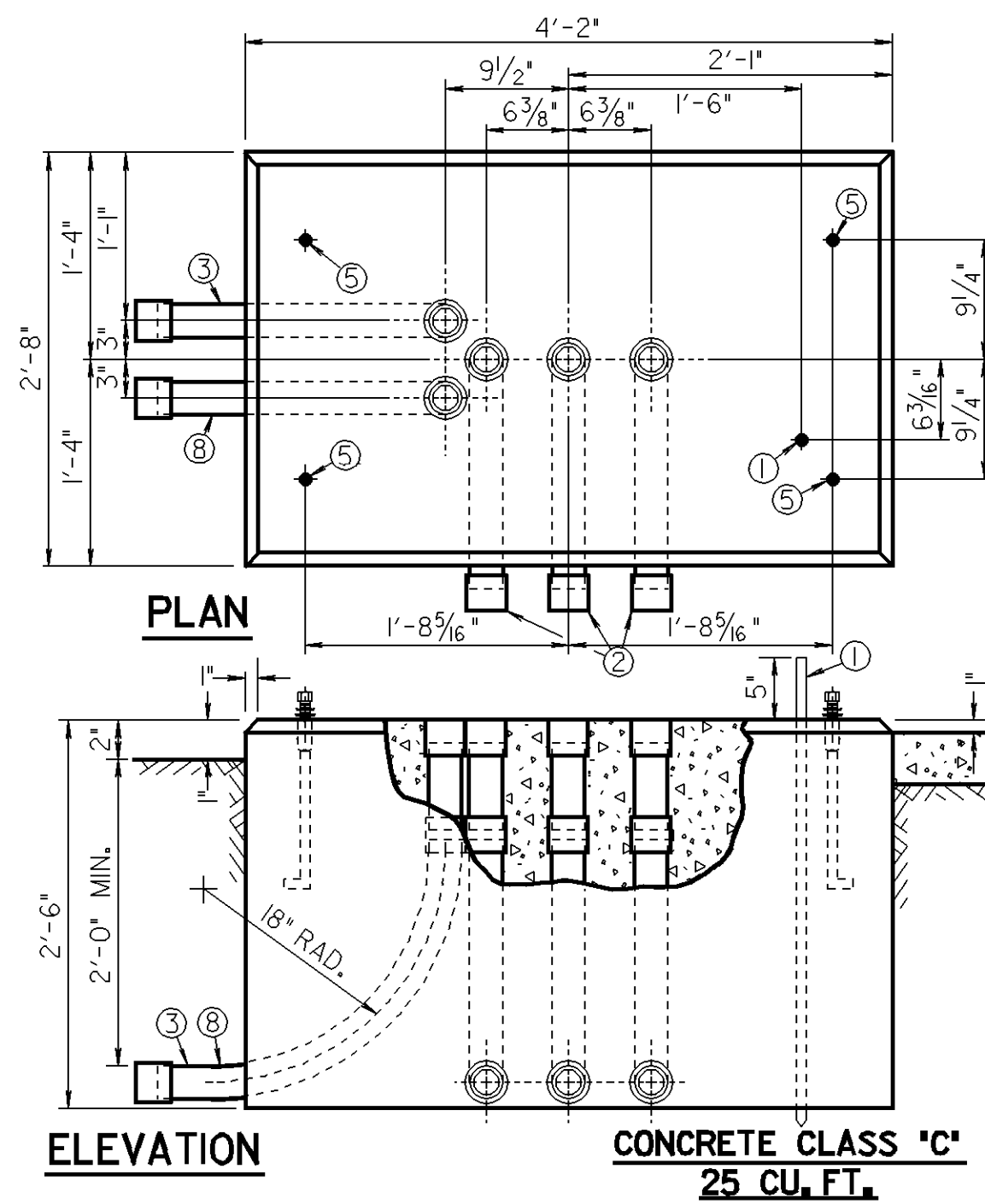
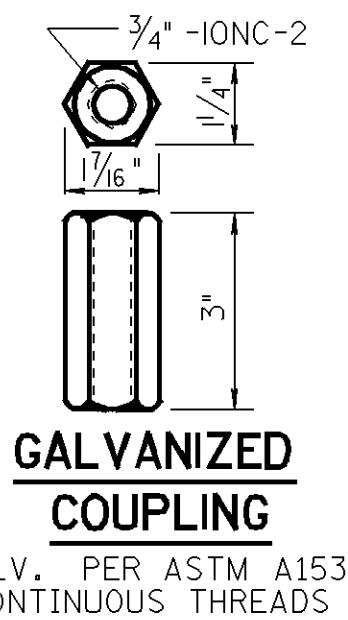
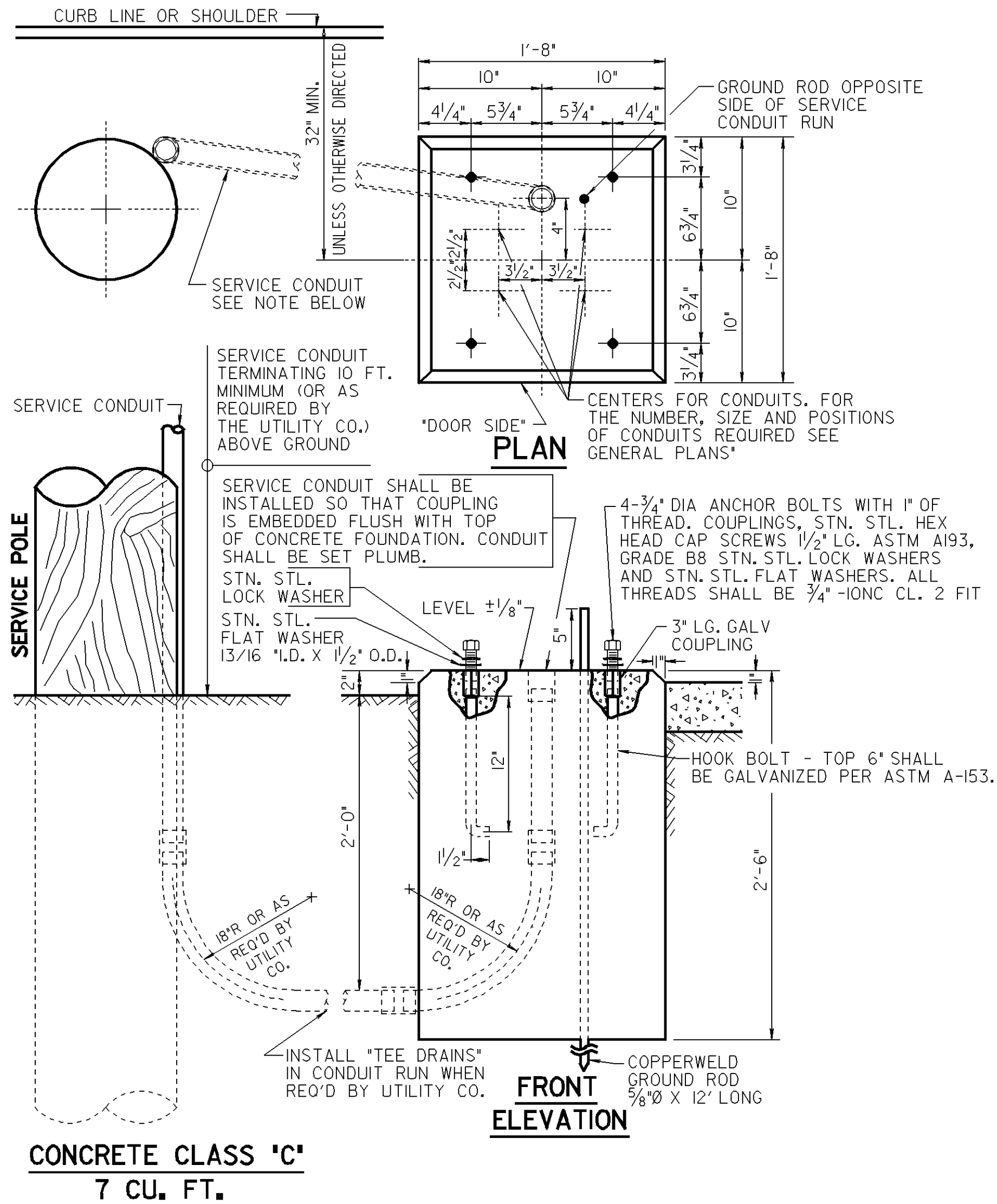
ELECTRICAL DETAILS
N.T.S.

N.T.S.

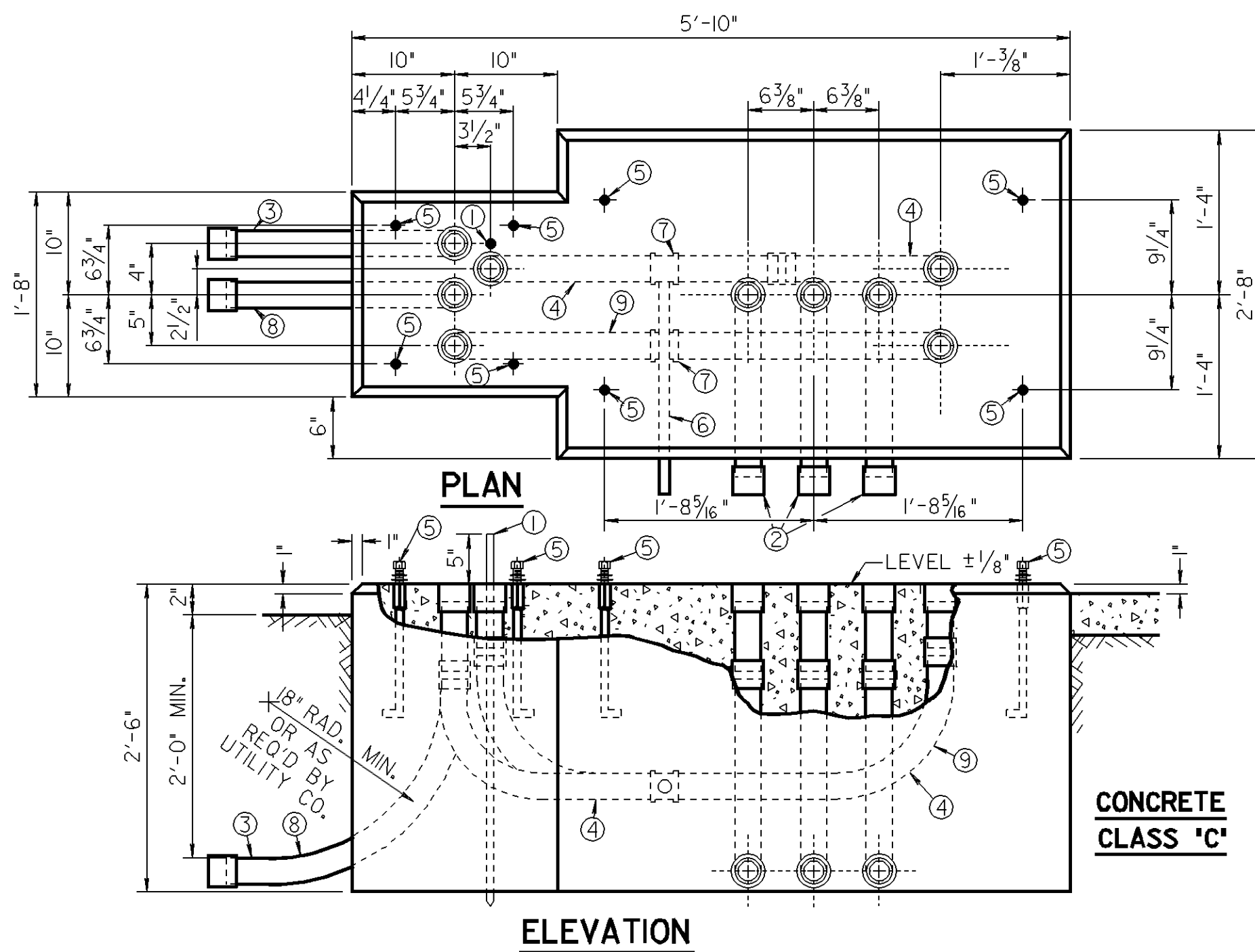
DETAILS FOR FLASHING SCHOOL SIGNS

T-1501

REFERENCE



FOUNDATION TYPE 'P'



FOUNDATION TYPE 'P-MC'

ITEM

- 1/8" X 12' LG. GROUND ROD.
- 3" DIA. RIGID METALLIC CONDUIT. (ALL SHALL EXTEND TO JUNCTION BOX)
- RIGID METALLIC CONDUIT (SERVICE CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE
- 2" DIA. RIGID METALLIC CONDUIT (SERVICE CONDUIT)
- 3/4" DIA. ANCHOR BOLTS. (SEE "SPF" FOUNDATION FOR DETAILS)
- DRAIN 1" DIA. RIGID METALLIC CONDUIT (PITCH TO JUNCTION BOX).
- 2" X 2" X 1" GALV. TEE FITTING.
- RIGID METALLIC CONDUIT (INTERCONNECT CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE IF NOT SPECIFIED 2" DIA. RMC SHALL BE INSTALLED.
- 2" DIA. RIGID METALLIC CONDUIT (INTERCONNECT CONDUIT)

NOTES:

- ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.
- J-BOLT MUST BE INSERTED 1/2" $\pm 1/16"$ INTO 3" COUPLING
- ALL FOUNDATIONS SHALL BE POURED MONOLITHIC

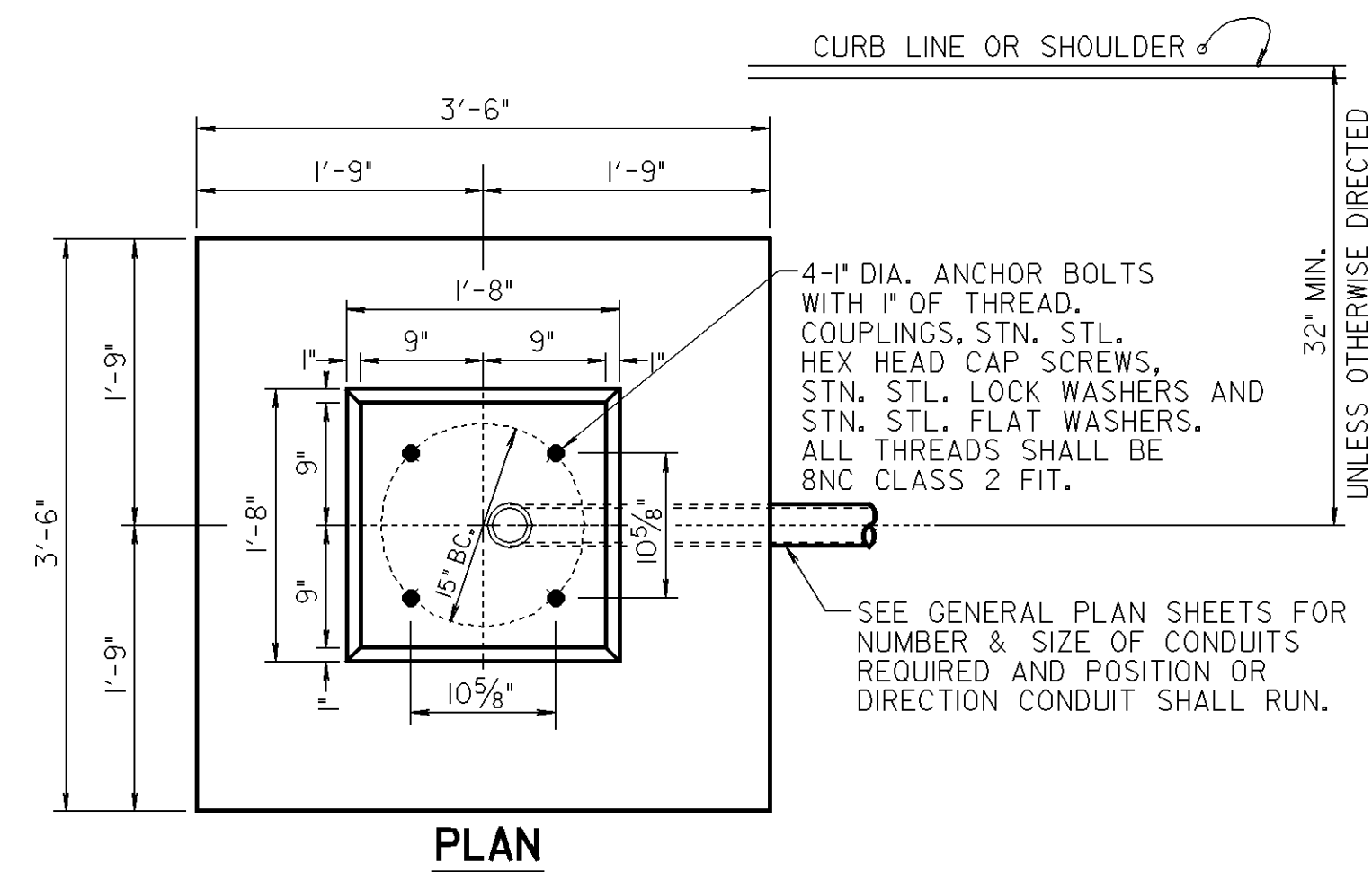
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

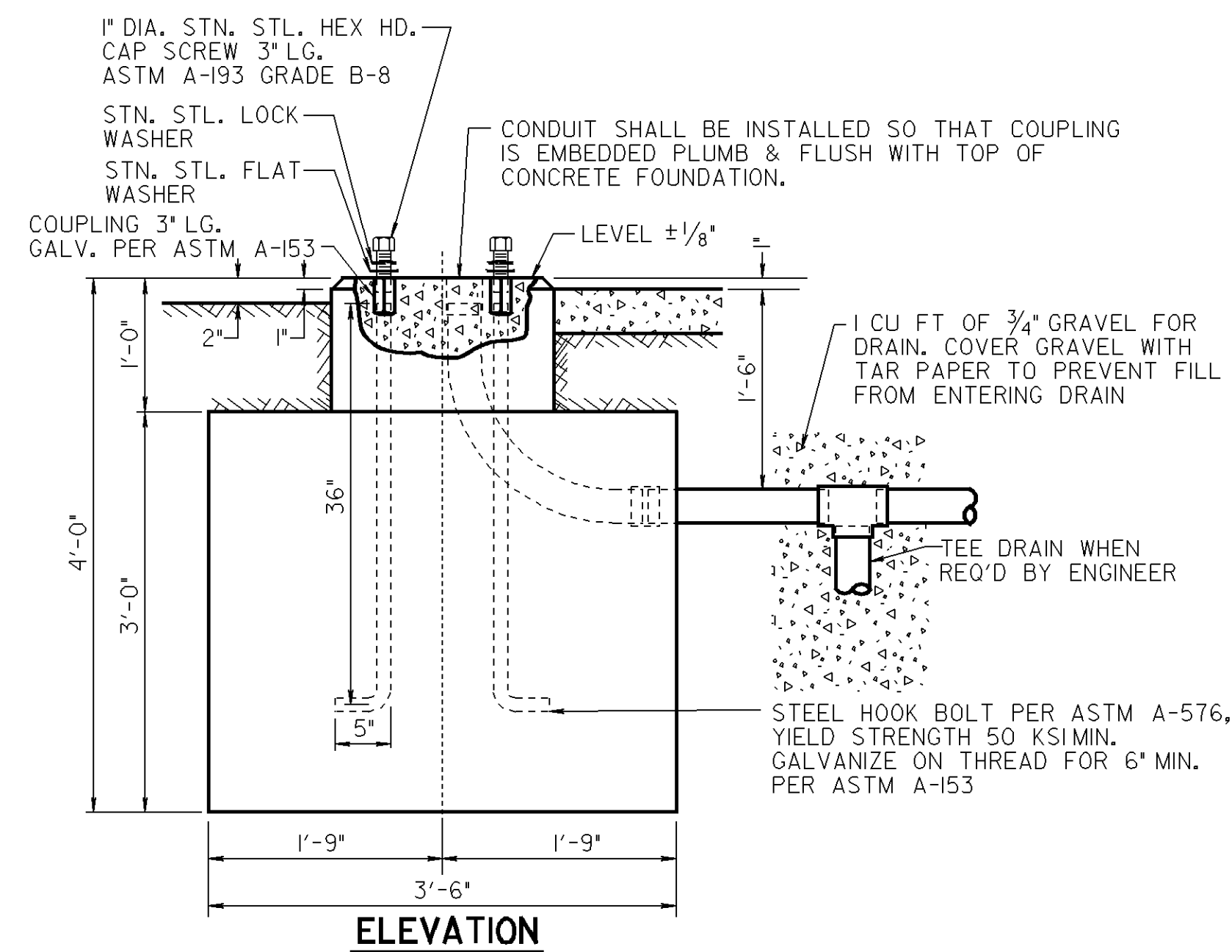
TYPICAL DETAILS FOR
MCF, P & P-MC FOUNDATIONS

T-1601

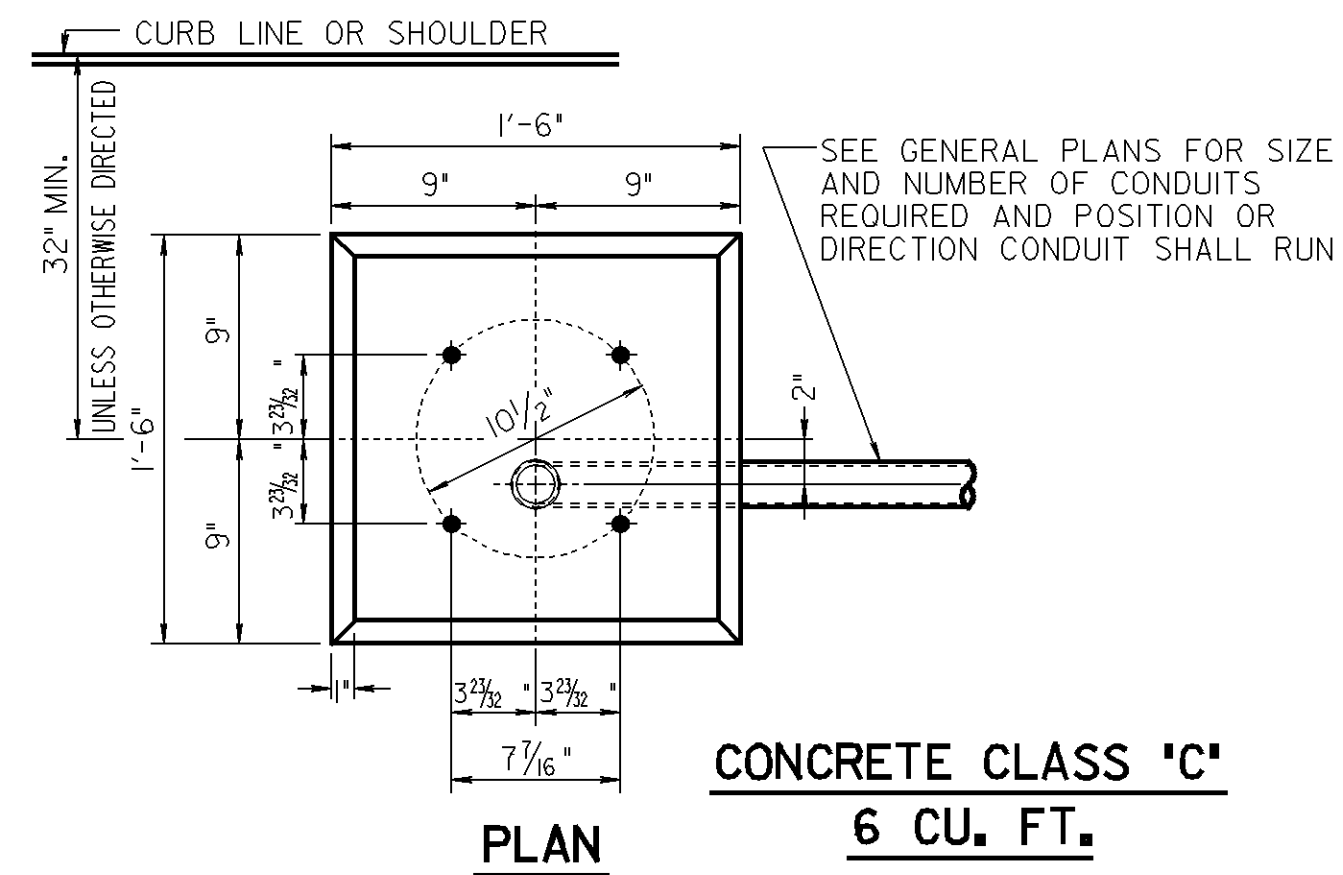




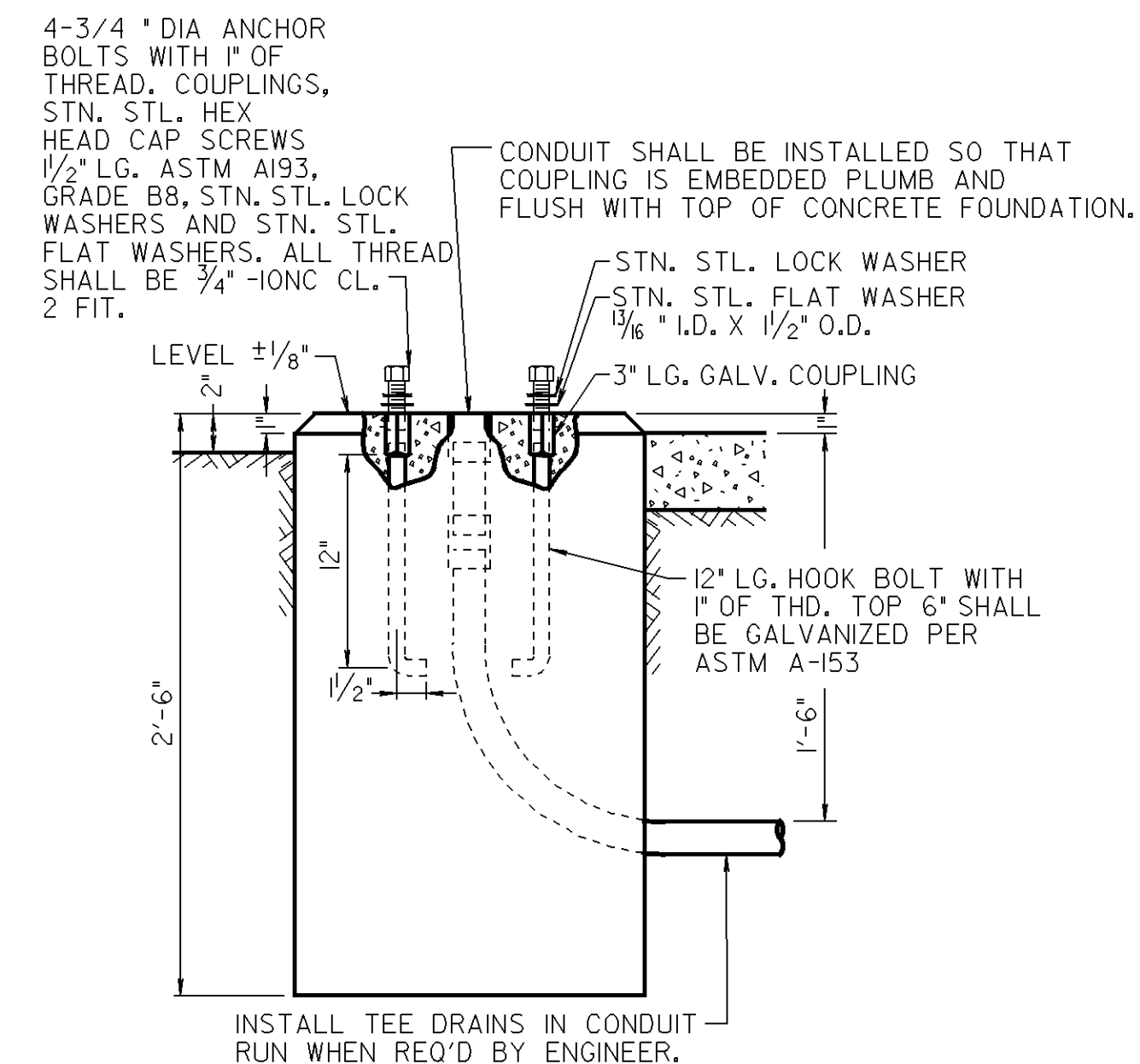
CONCRETE CLASS 'C'
1.5 CU. YDS.
FOUNDATION SHALL BE POURED
MONOLITHIC



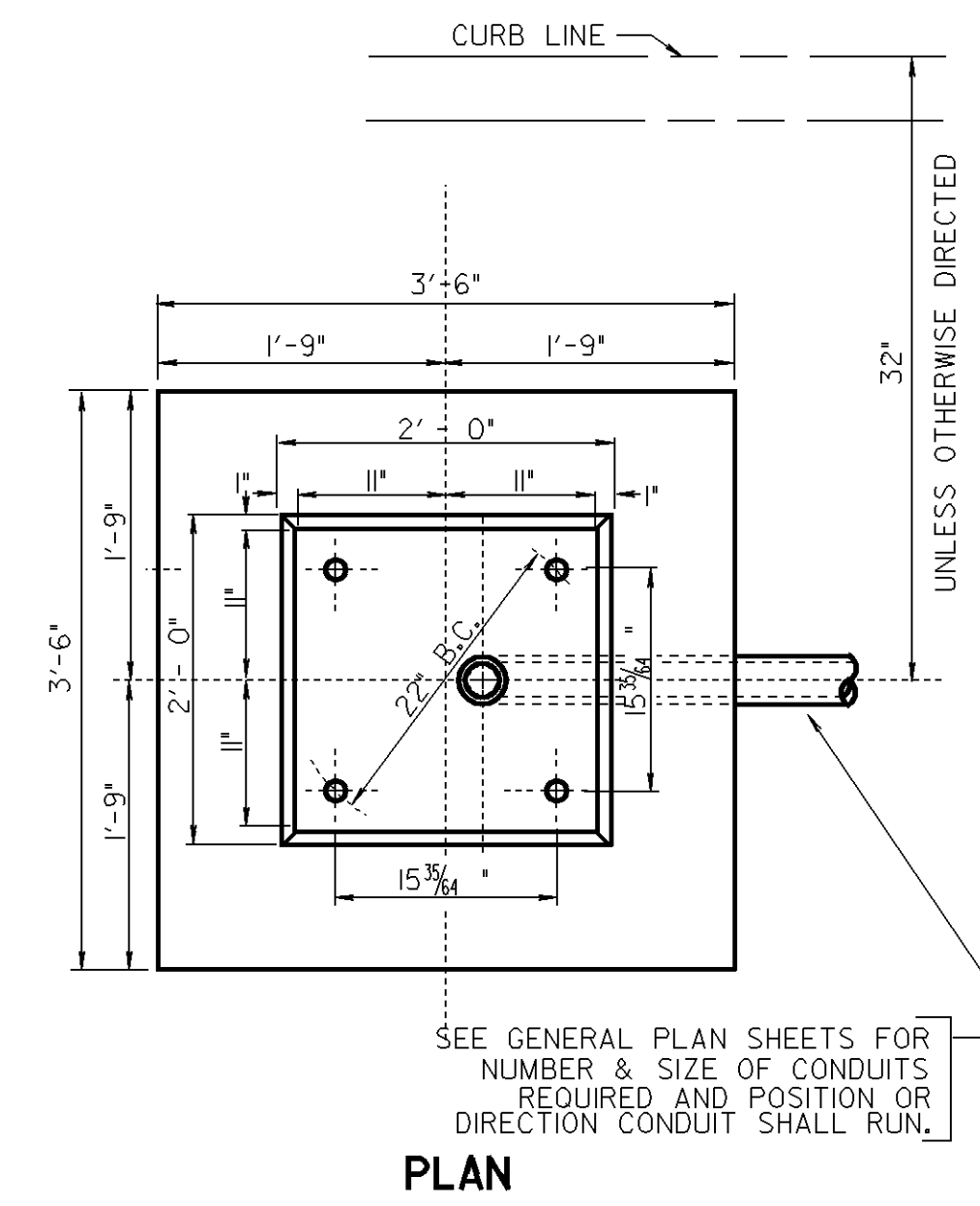
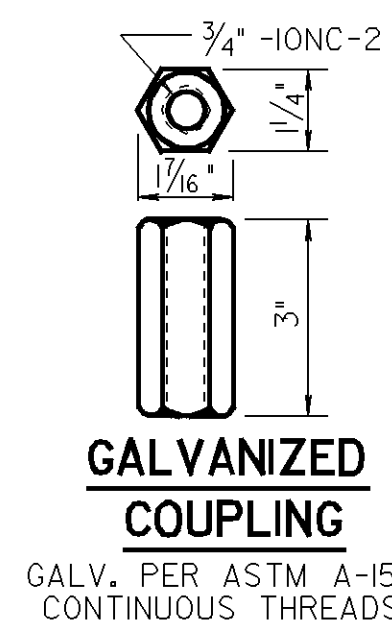
STANDARD FOUNDATION
TYPE 'SFT'



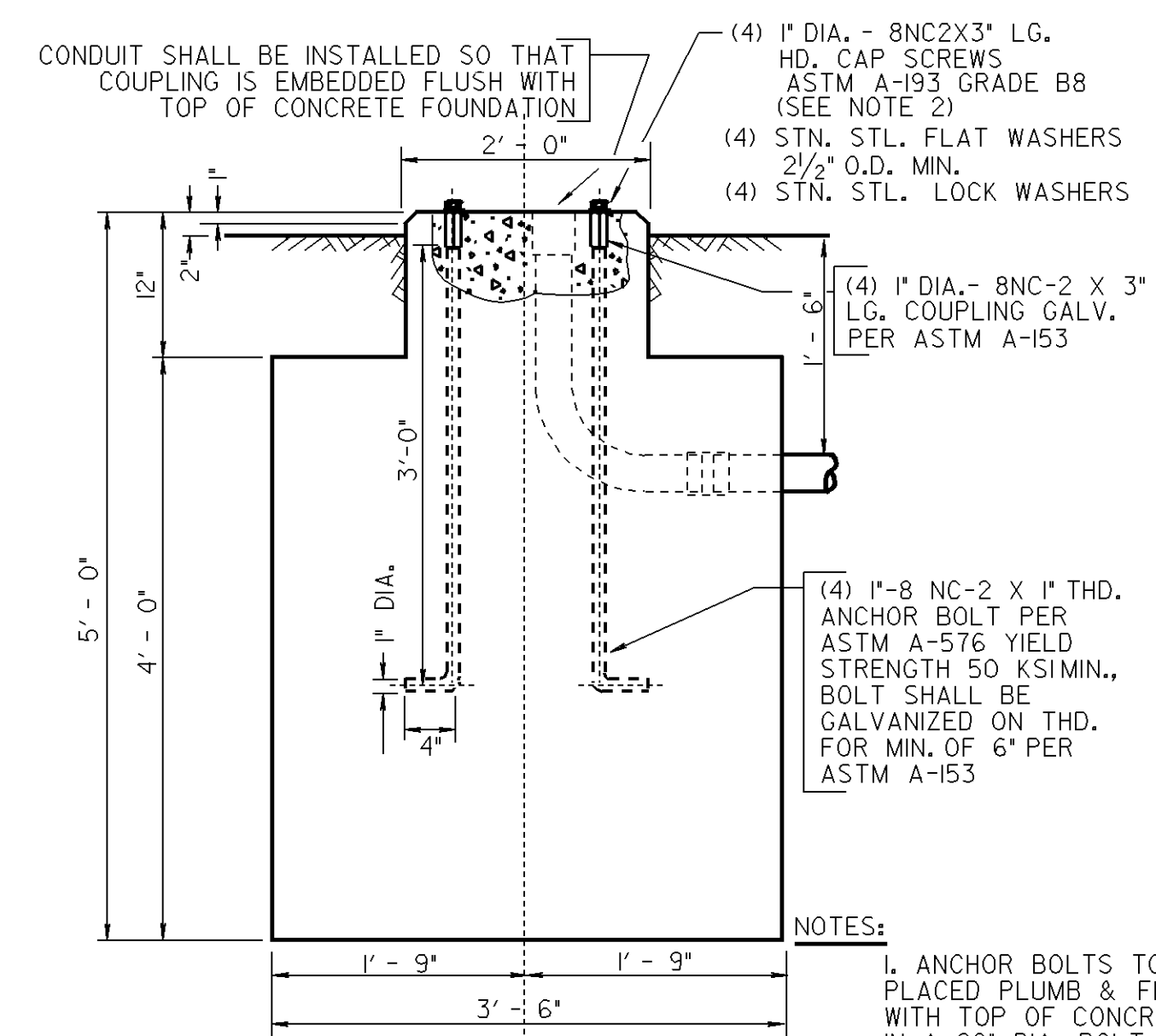
CONCRETE CLASS 'C'
6 CU. FT.



PEDESTAL FOUNDATION
TYPE 'SPF'



PLAN



ELEVATION
FOUNDATION TYPE 'SFK'

CONCRETE CLASS 'C'
2 CU. YDS.
FOUNDATION SHALL BE POURED MONOLITHIC

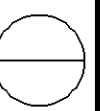
- NOTES:
1. ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.
 2. J-BOLT MUST BE INSERTED $1\frac{1}{2}" \pm \frac{1}{16}"$ INTO 3" COUPLING

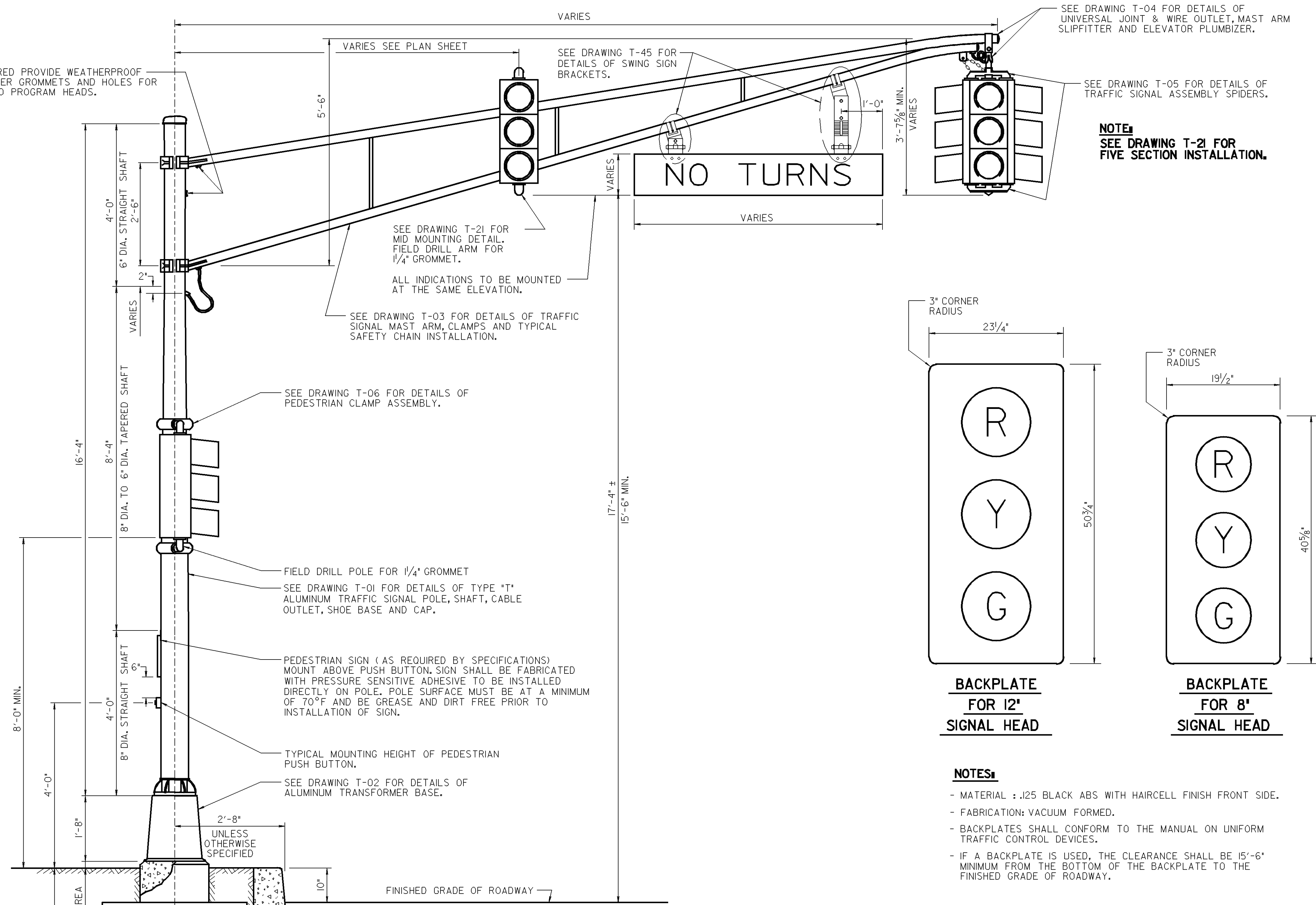
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

TYPICAL DETAILS FOR SFT, SFK,
SPF, FOUNDATIONS

T-1701





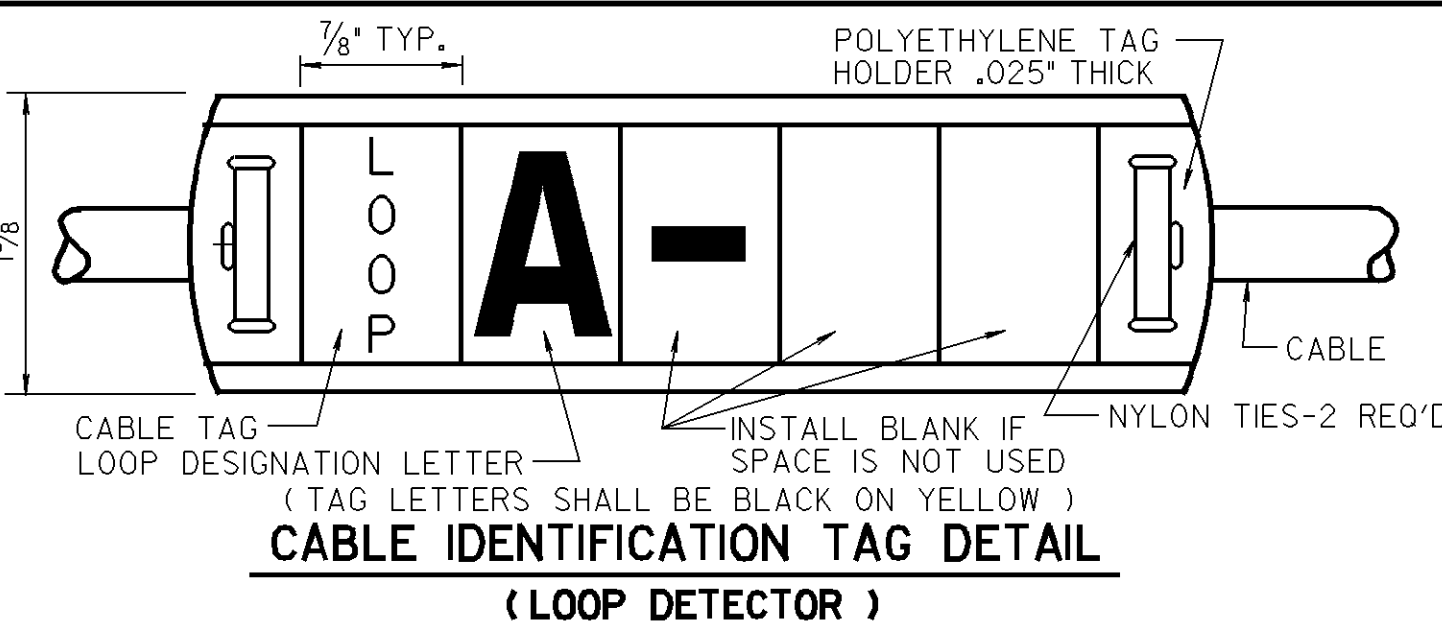
NOTE:
SEE DRAWING T-21 FOR
FIVE SECTION INSTALLATION.

BACKPLATE
FOR 12"
SIGNAL HEAD

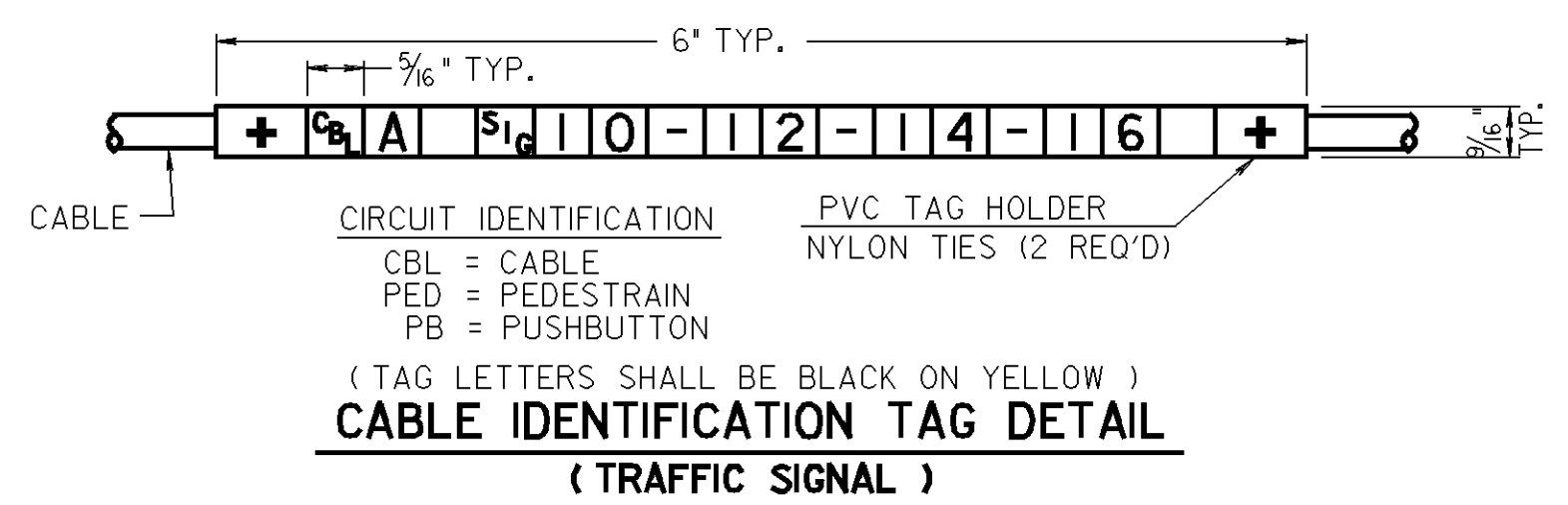
BACKPLATE
FOR 8"
SIGNAL HEAD

- NOTES:**
- MATERIAL : .125 BLACK ABS WITH HAIRCELL FINISH FRONT SIDE.
 - FABRICATION: VACUUM FORMED.
 - BACKPLATES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 - IF A BACKPLATE IS USED, THE CLEARANCE SHALL BE 15'-6" MINIMUM FROM THE BOTTOM OF THE BACKPLATE TO THE FINISHED GRADE OF ROADWAY.

TYPICAL INSTALLATION

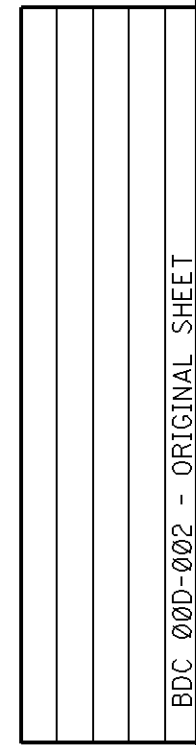
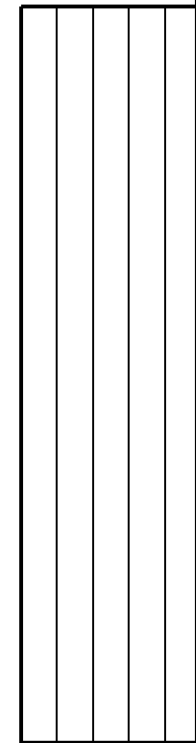
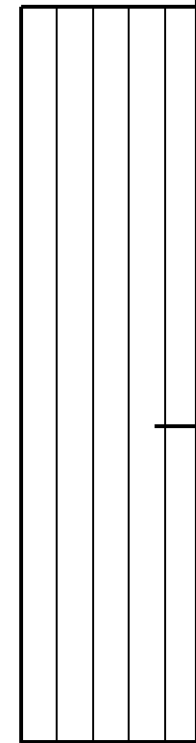


CABLE IDENTIFICATION TAG DETAIL
(LOOP DETECTOR)

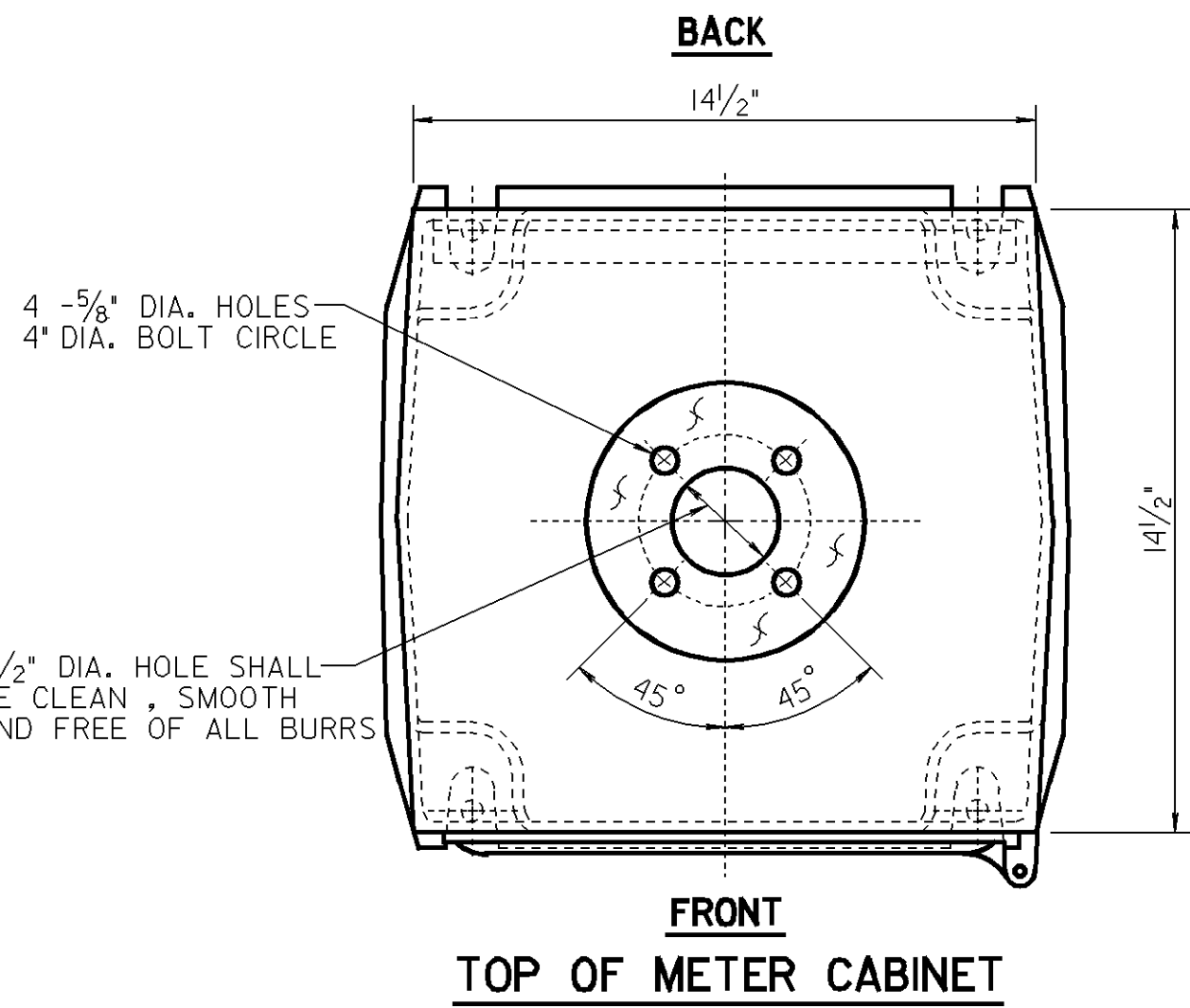


CABLE IDENTIFICATION TAG DETAIL
(TRAFFIC SIGNAL)

REFERENCE



BDC 000-002 - ORIGINAL SHEET



PROVIDE APPROVED WATERTIGHT
COVER (SEE DETAIL OF METER
CABINET CAP.)

DOOR SHALL BE PROVIDED
WITH CONTINUOUS NEOPRENE
GASKET SECURED IN DOOR
GROOVE TO INSURE DUST
TIGHT AND WEATHERPROOF
PROTECTION.

CORBIN LOCK
NO. 0357 S.G.
NO SUBSTITUTE

METER SOCKET AND
METER (IF REQUIRED,
SEE NOTE 6)

1/4" - 5/16"

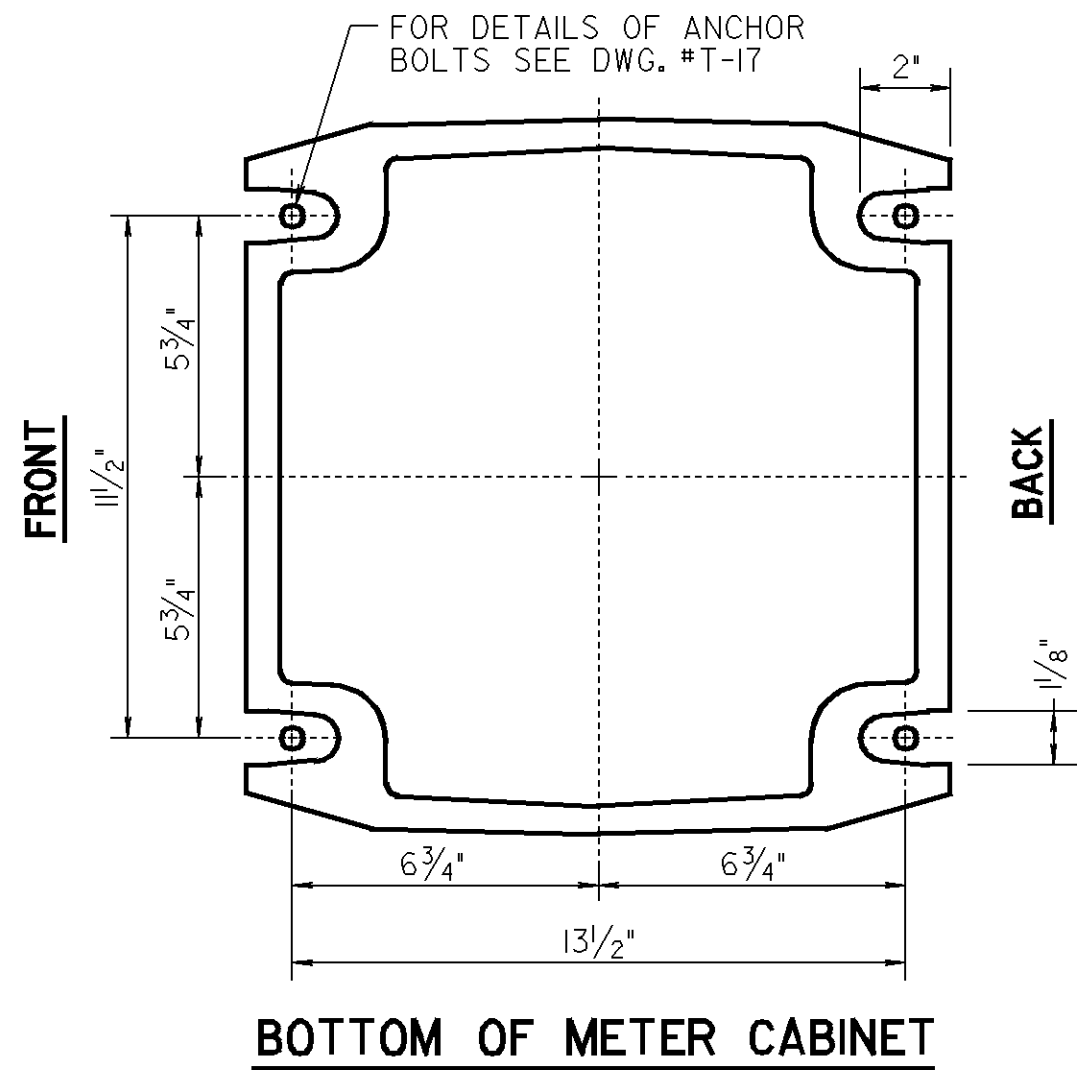
2 1/2"

3"

FRONT ELEVATION

METER CABINET DETAIL

- ALUMINUM ALLOY, COMMERCIAL DESIGNATION 356
A.S.T.M. DESIGNATION B26-56T, ALLOY SG 70A.
- THE CABINET SHALL BE FREE OF BURRS, SHARP EDGES,
DENTS, PINHOLES, AND PARTING LINES AND SHALL HAVE
A UNIFORM #30 GRIT FINISH.
- FOR ALTERNATE FABRICATED METER CABINET SEE DWG. T-35



1/4" DIA. X 3" LONG
HINGE PINS,
STAINLESS STEEL

DRILL 5/64" HOLE
AND FURNISH
BRASS RIVET

DRILL 1/2" Ø HOLE AND COVER
WITH 1/4" THICK PLEXIGLASS,
GASKET AND S.S. HARDWARE.

13 1/2" WIDE BY 3/4" THICK BY 35" LONG
WEATHERPROOF PLYWOOD PANEL BOARD
SHALL BE INSTALLED ON INSIDE REAR WALL
OF CABINET, PROVIDE 1/4" AIR SPACE AS SHOWN.
FASTEN WITH (6) 1/4" - 20NC STN. STL., FLAT HD.
MACHINE SCREW (DRILL & TAP METER CABINET).
PANEL BOARD TO BE GIVEN (1) COAT OF BLACK PAINT.

1/4" AIR SPACE

PROVIDE STN. STL.
FASTENERS FOR
GROUNDING.

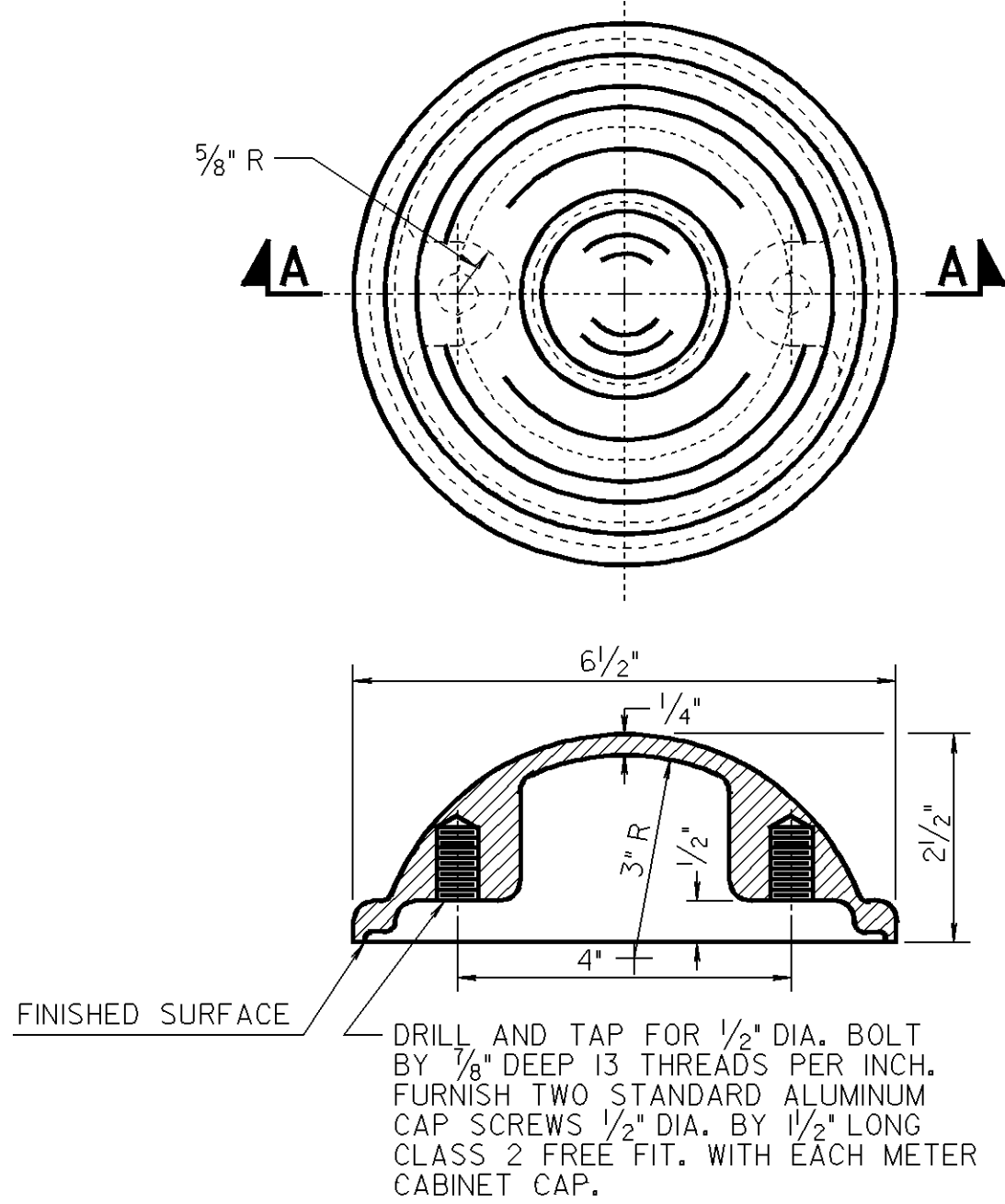
7/8" MIN.

1/4" MAX.

SIDE ELEVATION

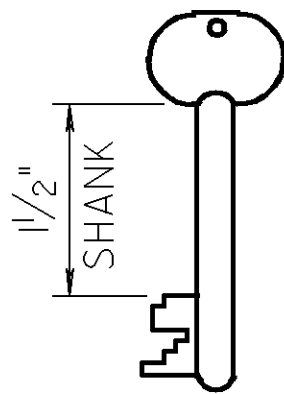
METER CABINET TYPE 'T'

METER CABINET TYPE 'TL' - SEE NOTE #8

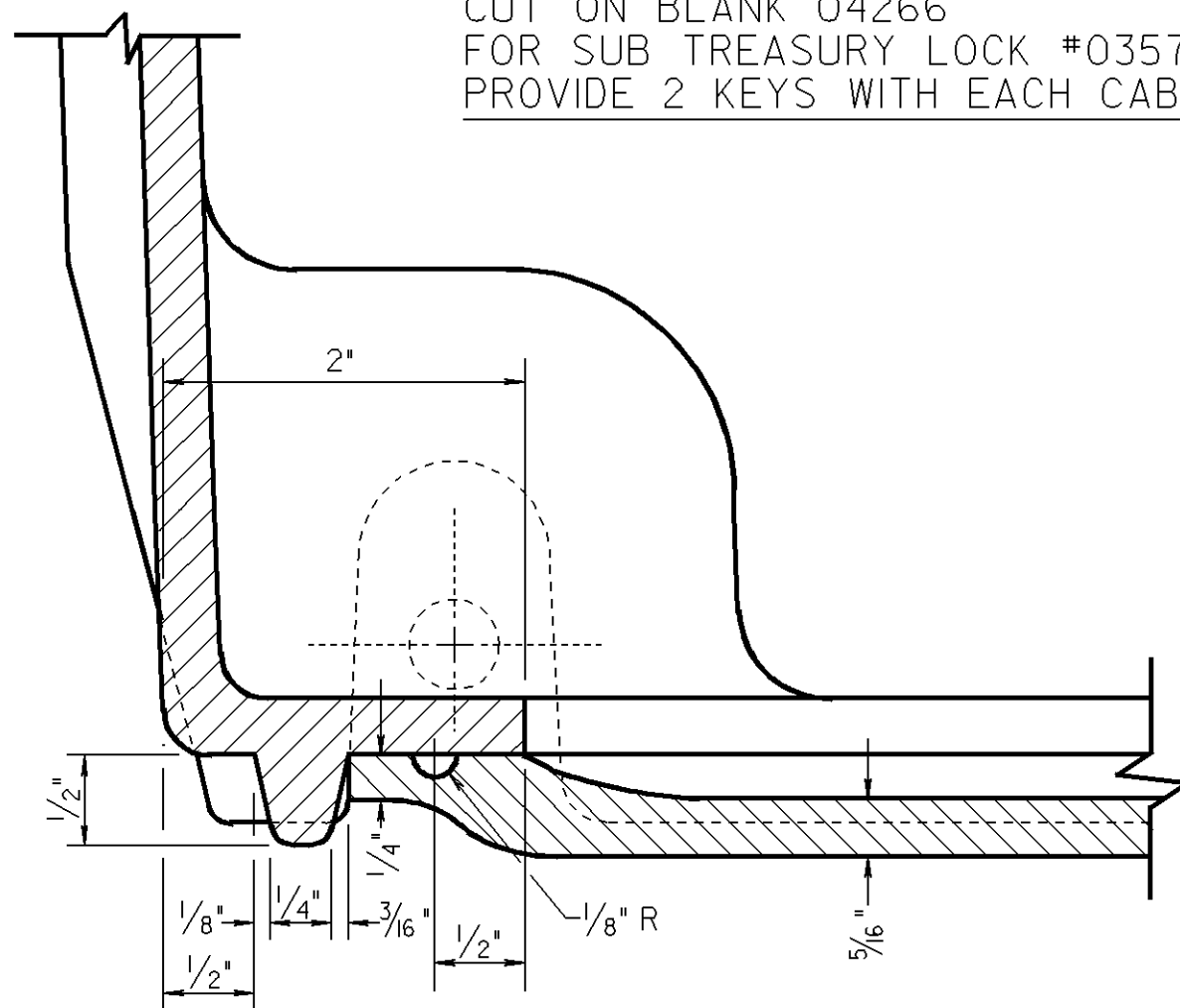


SECTION A-A
METER CABINET CAP DETAIL

ALUMINUM ALLOY, COMMERCIAL DESIGNATION 356
A.S.T.M. DESIGNATION B26-56T, ALLOY SG 70A

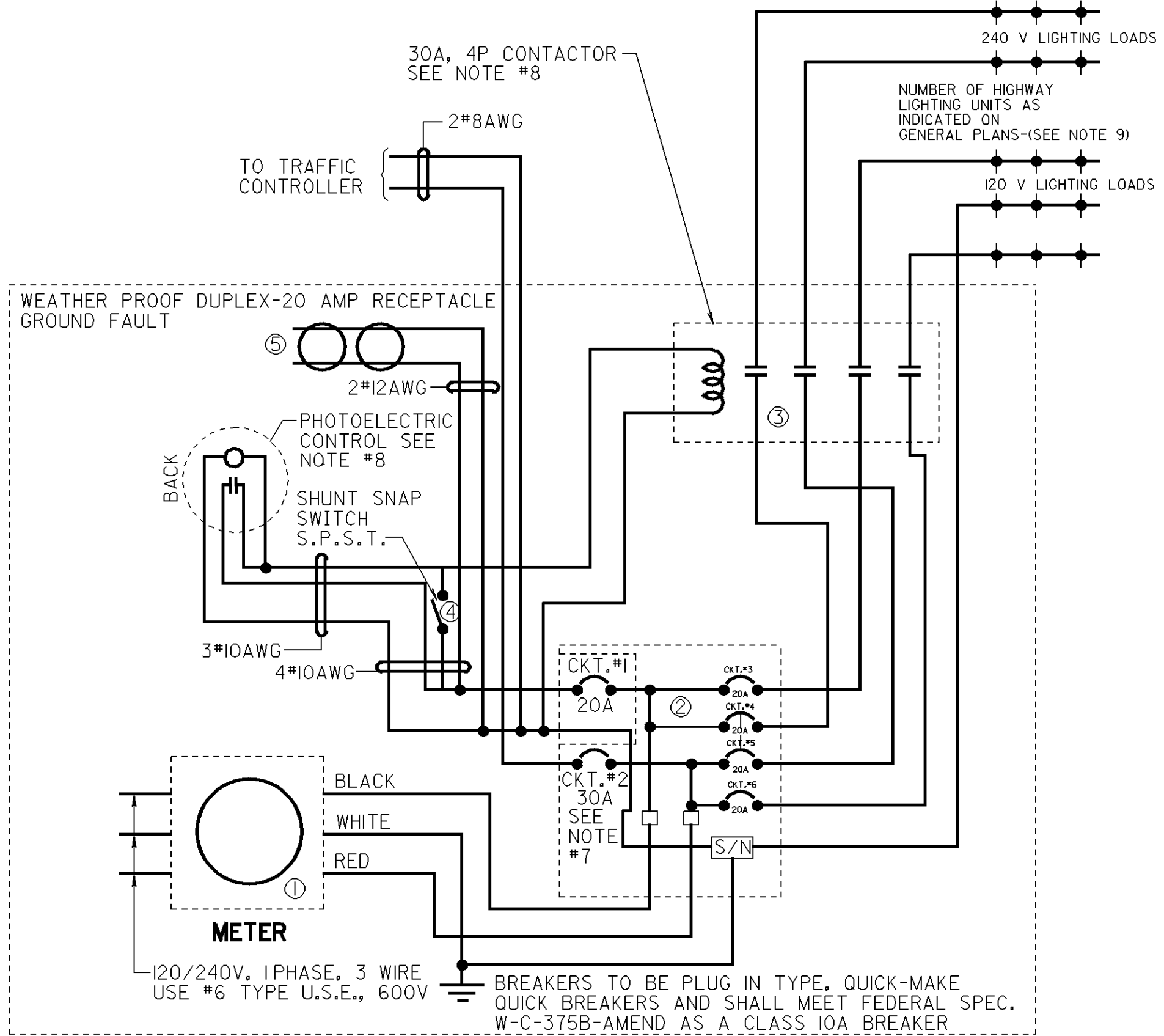


KEY ALIKE CHANGE #1
CUT ON BLANK 04266
FOR SUB TREASURY LOCK #03575
PROVIDE 2 KEYS WITH EACH CABINET



METER CABINET CORNER SECTION
SHOWING DOOR GASKET GROOVE DETAIL.

SECTION B-B



NOTE

ALL WIRE TO BE #6-AWG-600 VOLT
OR AS OTHERWISE SHOWN.

SCHEMATIC WIRING DIAGRAM: 120/240 VOLT

LEGEND

- ① METER SOCKET-INSTALLED BY CONTRACTOR-PROVIDED BY
UTILITY COMPANY ON REQUEST. (IN JCP&L CO. AREA METER
SOCKET IS TO BE INSTALLED AND FURNISHED BY CONTRACTOR)
- ② 4/8 CIRCUIT LOAD CENTER WITH ENCLOSURE COMPLETE WITH
1-30A & 5-20A CIRCUIT BREAKERS.
- ③ MAGNETIC CONTACTOR, 30 AMP, 120 VOLT COIL NEMA I ENCLOSURE.
- ④ PHOTOELECTRIC CONTROL UNIT 15 AMP. SHUNT SWITCH IN
2" X 4" HANDY BOX OR EQUIVALENT.
- ⑤ WEATHERPROOF, 20A DUPLEX RECEPTICAL GROUND FAULT.
- ⑥ IF METER IS NOT REQUIRED, INSTALL 1/4" I.D. SEALTITE FLEX
CONDUIT AND 1/4" I.D. NIPPLE FROM REDUCER COUPLING
TO MAIN BREAKER PANEL.
- ⑦ A 40 AMP BREAKER SHALL BE INSTALLED WITH EIGHT PHASE
CONTROLLER ASSEMBLIES.
- ⑧ FOR METER CABINET TYPE 'TL', PHOTOELECTRIC CONTROL AND
MAGNETIC CONTACTOR SHALL BE FURNISHED AND INSTALLED.
- ⑨ THE TOTAL NUMBER OF CIRCUIT BREAKERS SHALL NOT
EXCEED SIX.

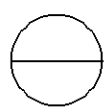
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

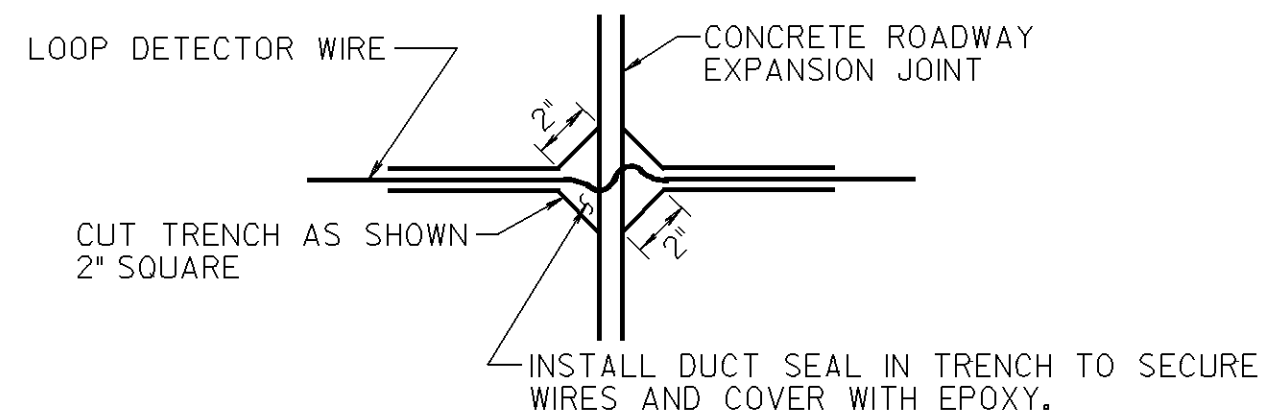
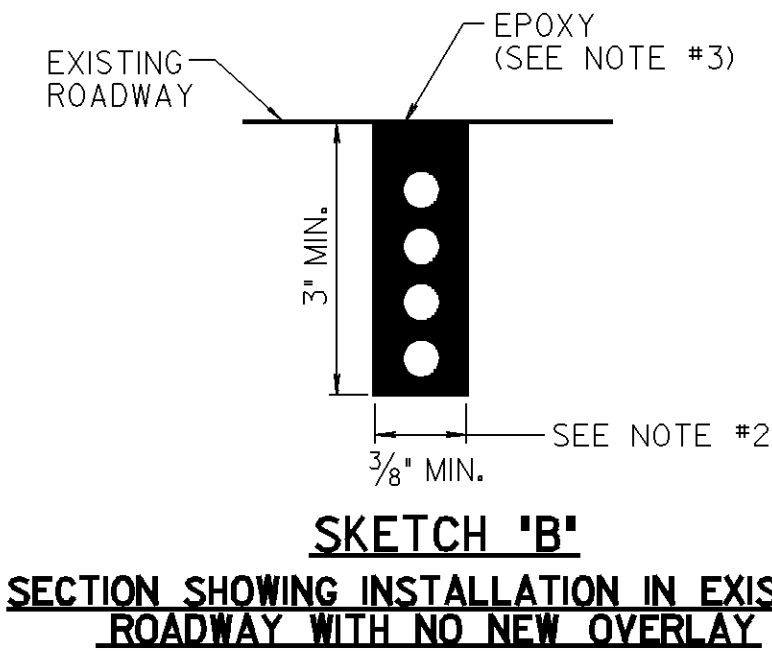
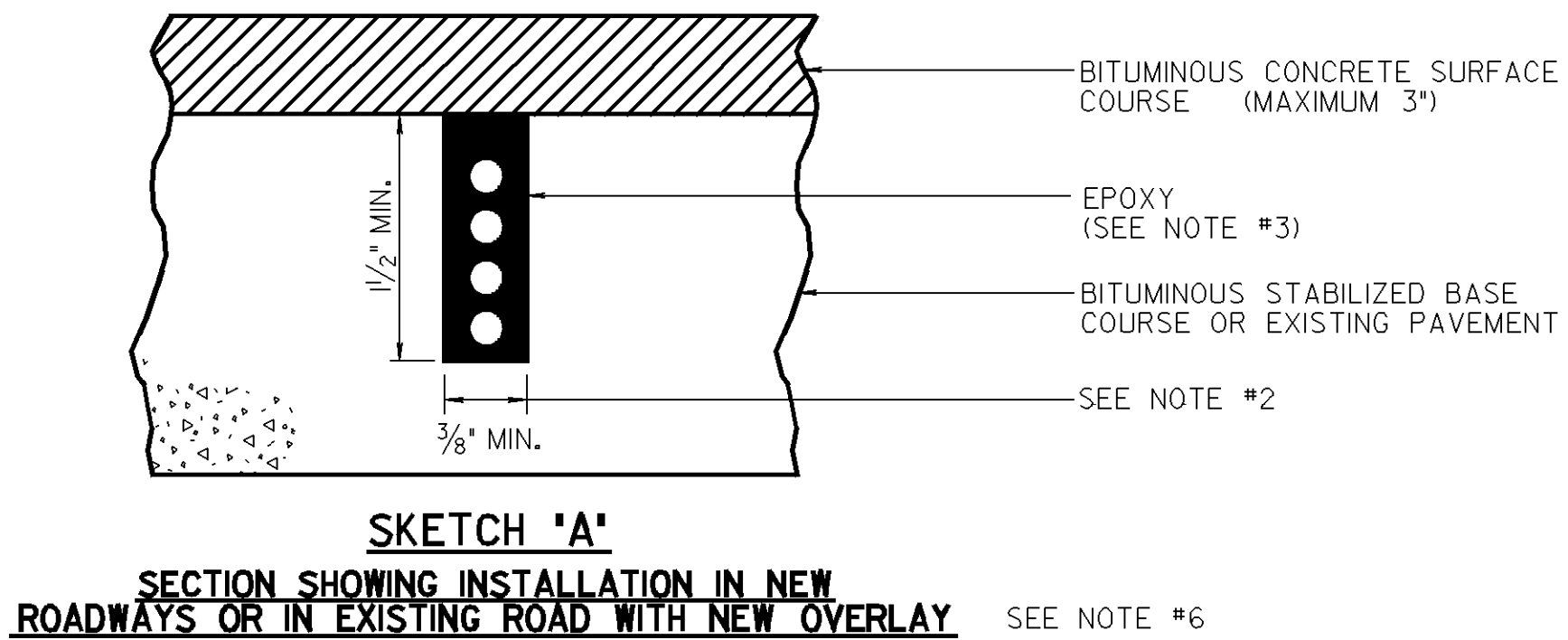
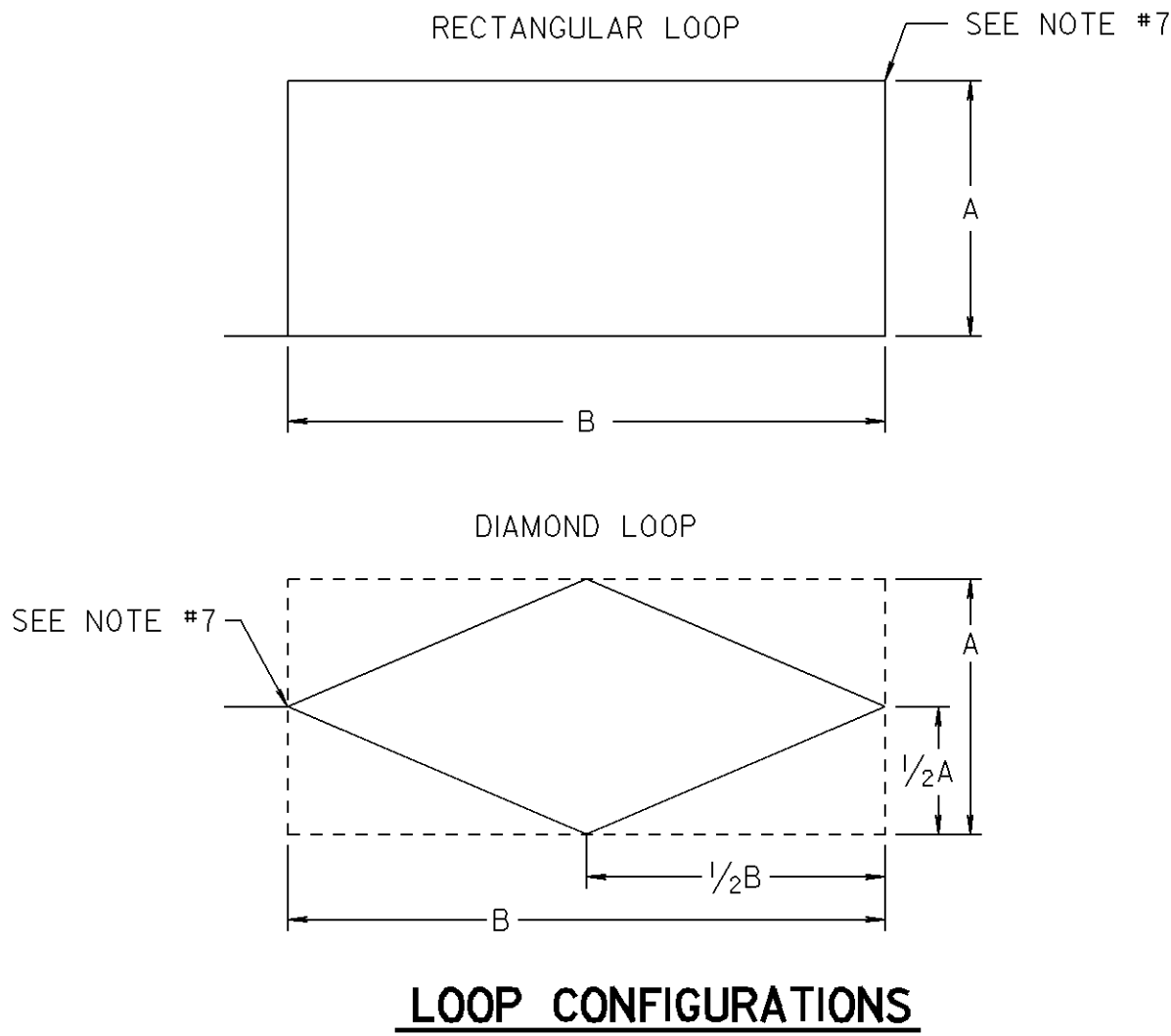
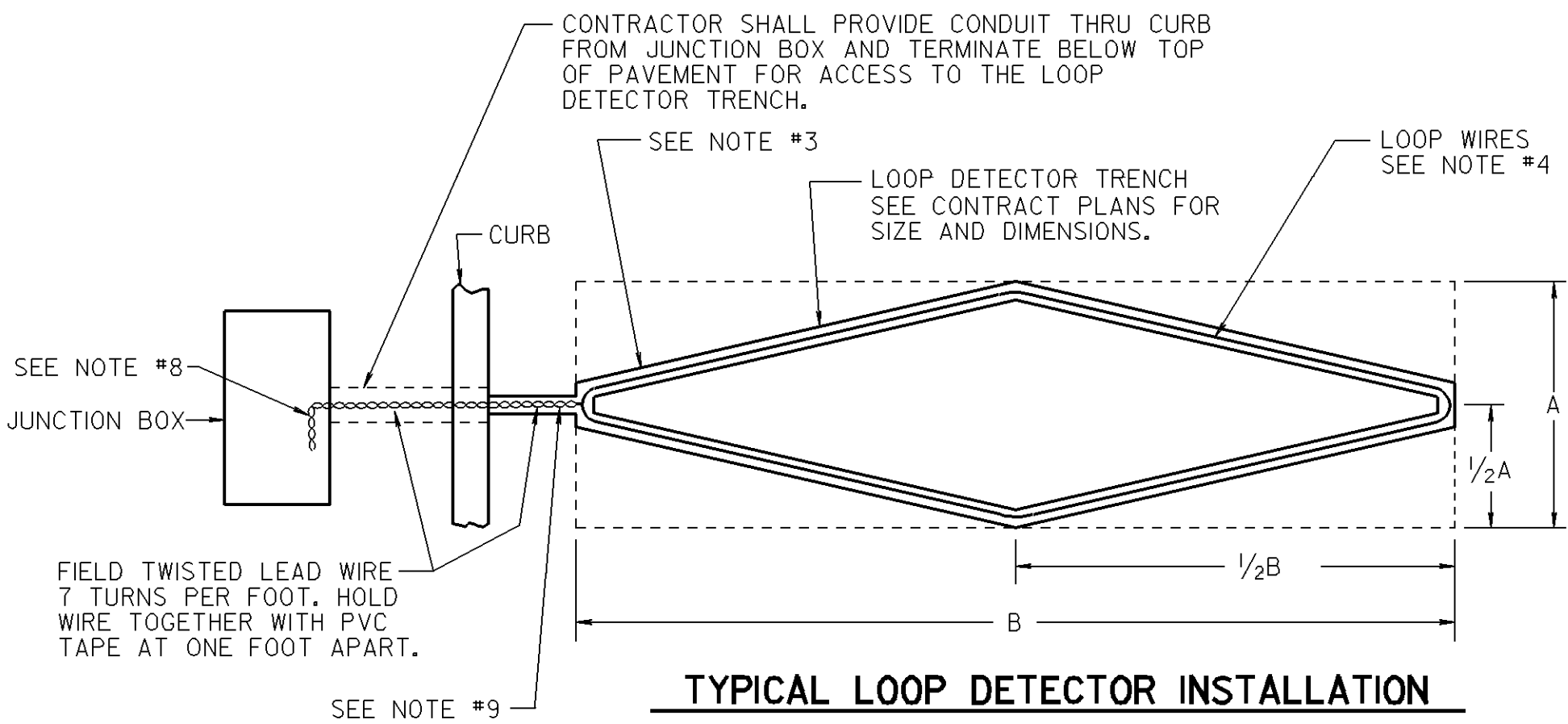
N.T.S.

METER CABINET TYPE 'T' AND 'TL'
ELECTRICAL INSTALLATION

T-1901



REFERENCE



GENERAL NOTES

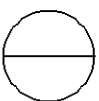
- 1.) SKETCH 'A' & 'B' APPLIES WHEN CONTRACT PROVIDES FOR LOOP DETECTOR ONLY.
- 2.) DIMENSIONS AND CONFIGURATIONS FOR LOOP DETECTOR TRENCHES SHALL BE AS SHOWN ON THE PLAN SHEETS FOR EACH LOCATION. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TRENCH OF SUFFICIENT SIZE TO ACCOMMODATE THE TYPE AND THE NUMBER OF OF CONDUCTORS REQUIRED BY LOOP DETECTOR SENSOR.
- 3.) EPOXY FOR LOOP DETECTORS TO BE A FLEXIBLE SEALER WITH SUFFICIENT STRENGTH AND RESILIENCY TO WITHSTAND STRESS SET UP BY DIFFERENCE IN EXPANSION AND CONTRACTION OF THE PAVEMENT CAUSED BY TEMPERATURE CHANGES AND NORMAL PAVEMENT MOVEMENT.
- 4.) THE LOOP INDUCTANCE SHALL BE MEASURED IN THE FIELD. ALL LOOPS SHALL HAVE SIX TURNS.
- 5.) "DIAMOND" LOOPS ARE BASED ON RECTANGULAR MEASUREMENTS GIVEN IN THE LOOP DETECTOR SCHEDULE ON PLAN SHEETS FOR EACH LOCATION.
- 6.) LOOPS IN EXISTING ROADWAY SHALL BE INSTALLED AFTER THE MILLING PROCESS AND PRIOR TO THE INSTALLATION OF THE NEW OVERLAY.
- 7.) ALL CORNERS ARE TO BE CUT SMOOTH WITH A CHISEL TO ASSURE A CLEAN SMOOTH RADIUS.
- 8.) THE SPLICE KIT USED TO SPLICE THE LOOP DETECTOR LEAD TO THE LOOP WIRE SHALL ENCAPSULATE A MINIMUM OF 1' OF THE LOOP WIRE TUBING.
- 9.) IF THE LOOP WIRE IN THE CUT TRENCH TO THE CURB LINE IS DUCT WIRE, IT SHALL NOT BE TWISTED BUT TAPED TOGETHER EVERY 6" WITH PVC TAPE.

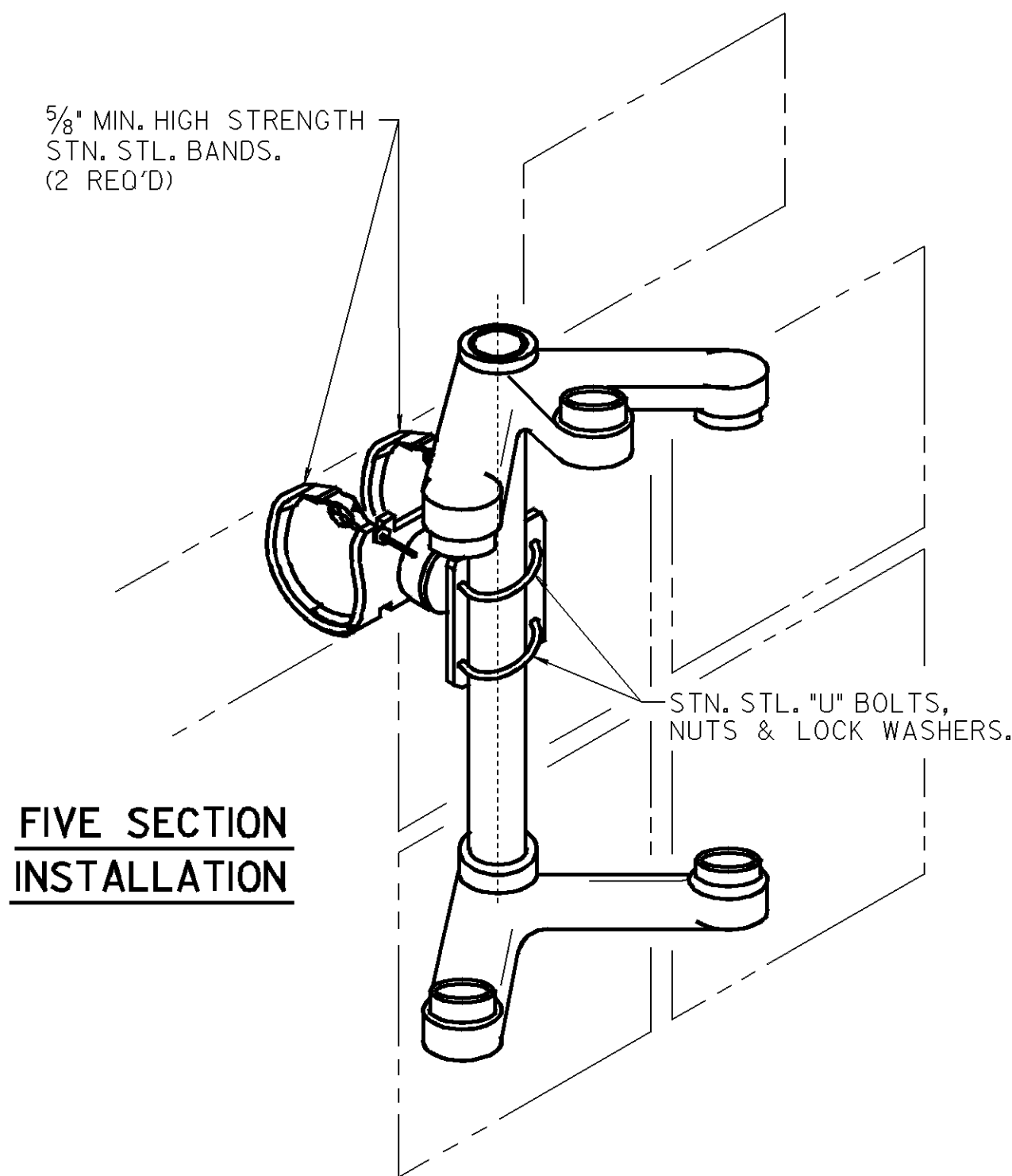
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

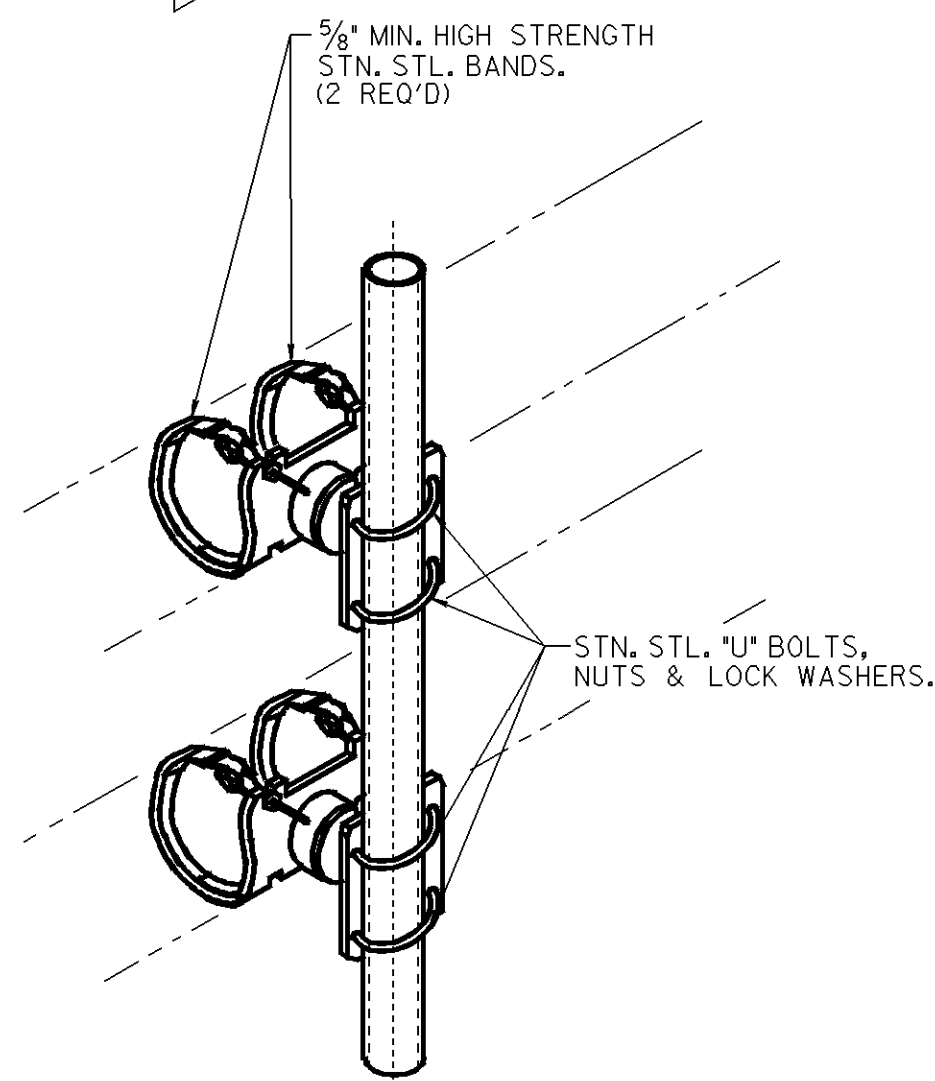
**LOOP DETECTOR TRENCH
& LOOP DETECTOR**

T-2001





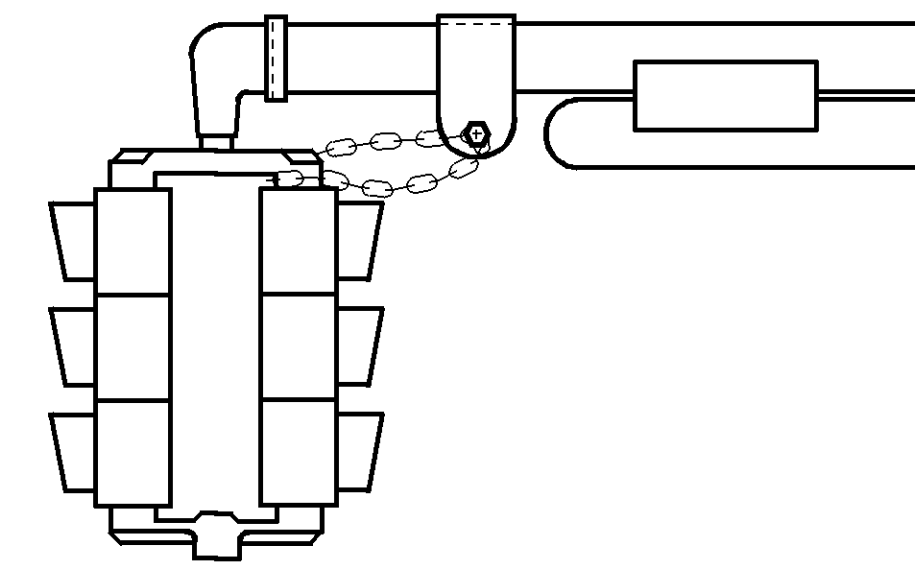
**FIVE SECTION
INSTALLATION**



MID MAST BRACKET DETAIL

NOTES:

1. TO MOUNT SIGNALS ON A PEDESTAL STANDARD INVERT 3 IN LINE BRACKETS WITH PIPE AND ELBOWS. USE A 4 1/2" SLIPFITTER IN PLACE OF THE MAST ARM PLUMBIZER.
2. TO MOUNT 8" SIGNALS BACK TO BACK WITH 12" SIGNALS USE SPACER NIPPLES ON BOTTOM. RED SIGNALS SHALL BE IN LINE.
3. TO MOUNT BACK TO BACK OPTICALLY PROGRAMMED SIGNALS USE MID MAST BRACKET.
4. MOUNTING BRACKETS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.

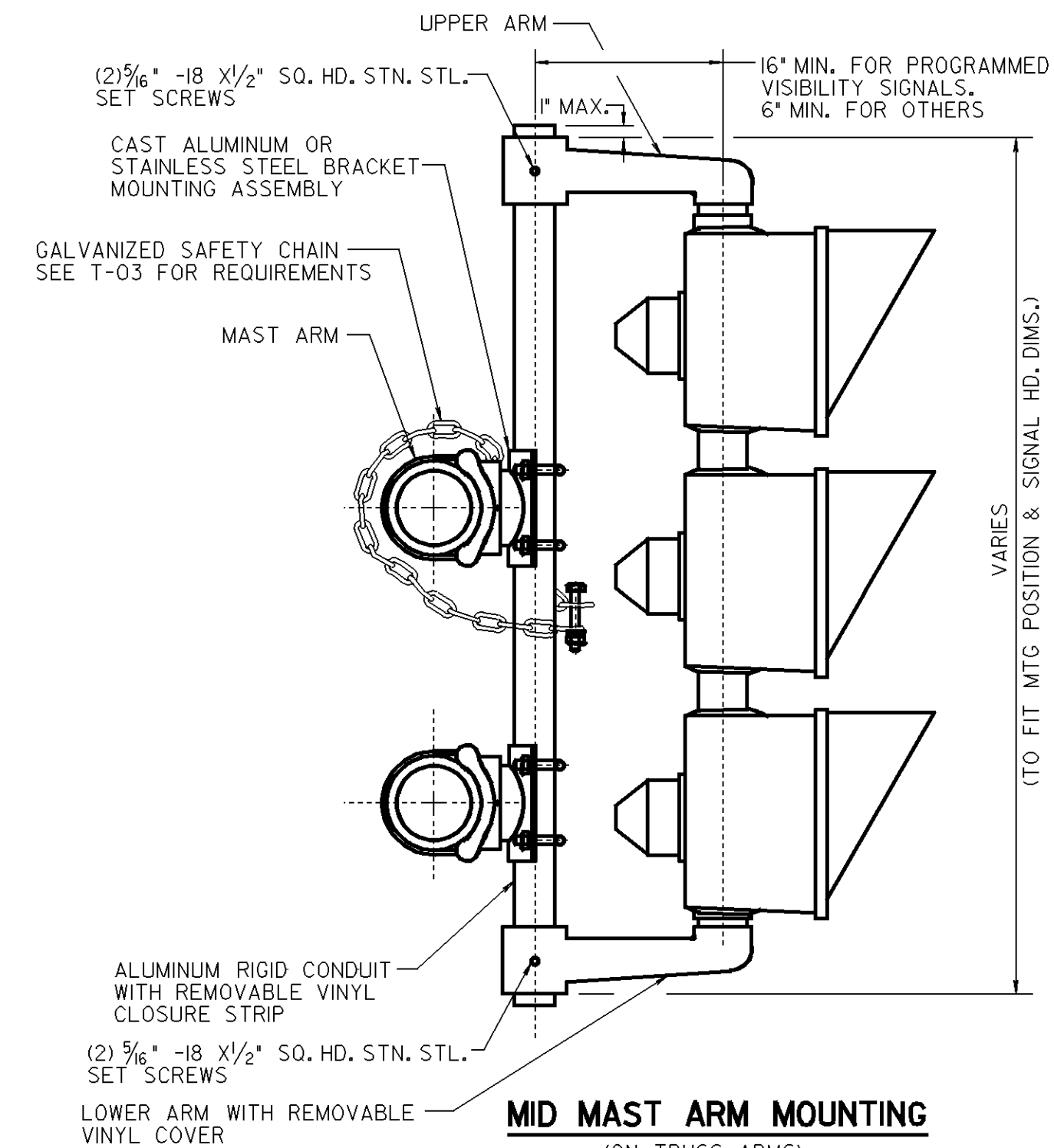


TYPICAL TRAFFIC SIGNAL INSTALLATION

SAFETY CHAIN REQUIREMENTS FOR TRAFFIC SIGNALS

FURNISH:

- 42" LG. 1/4" HOT DIPPED GALVANIZED COILPROOF STRAIGHT LINK CHAIN.
1- 5/16"Ø X 2 1/2" LG. STAINLESS STEEL HEX HEAD BOLT.
2 - 5/16"Ø STAINLESS STEEL HEX NUTS.
2 - 5/16"Ø STAINLESS STEEL FLAT WASHERS.
1- 5/16"Ø STAINLESS STEEL LOCK WASHER.



MID MAST ARM MOUNTING
(ON TRUSS ARMS)

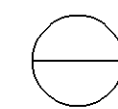
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

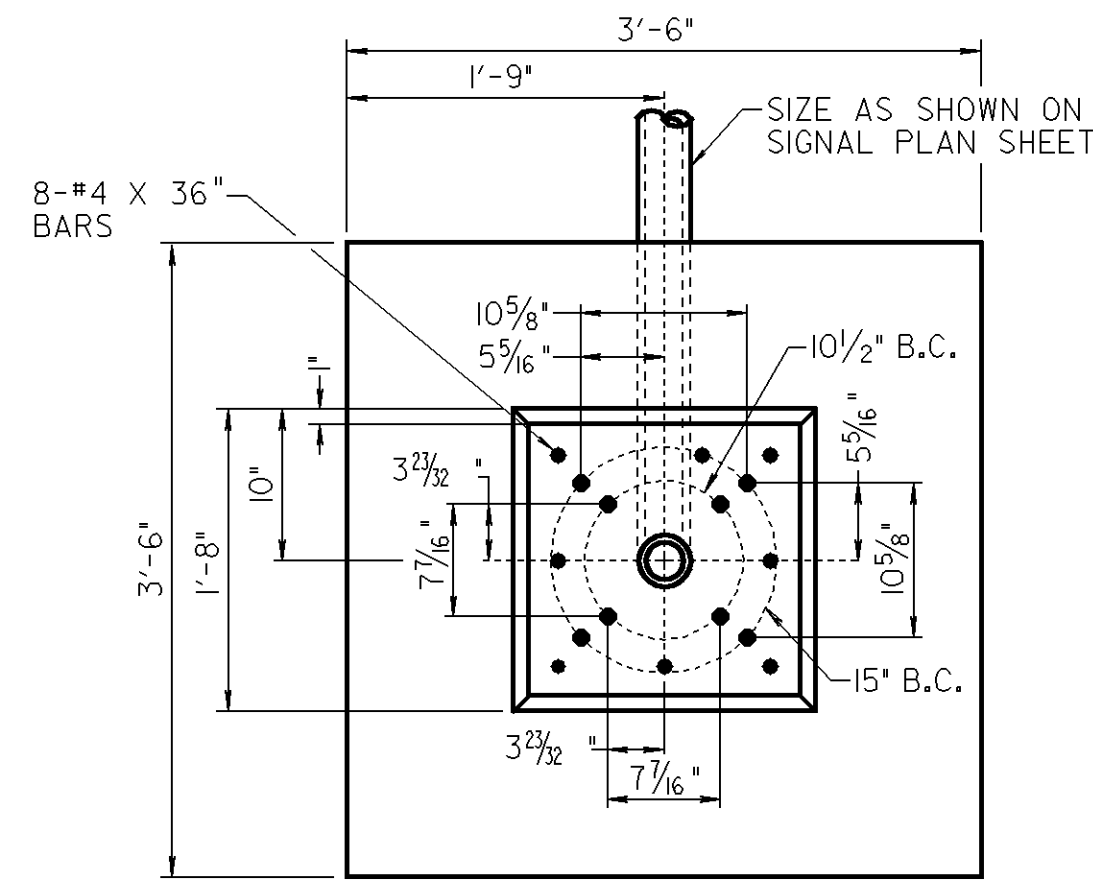
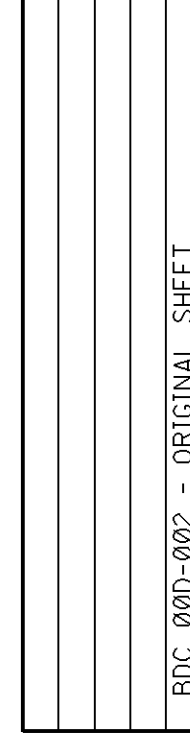
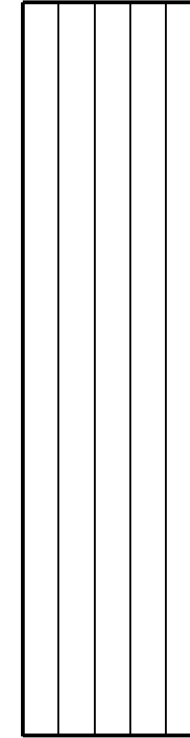
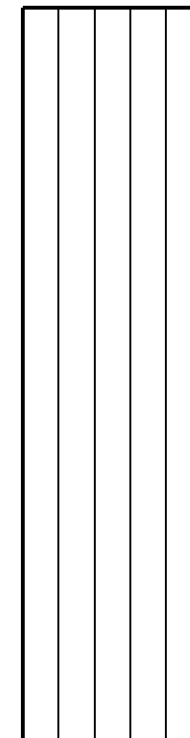
N.T.S.

OPTICALLY PROGRAMMED AND MIDMAST
MOUNTING DETAILS

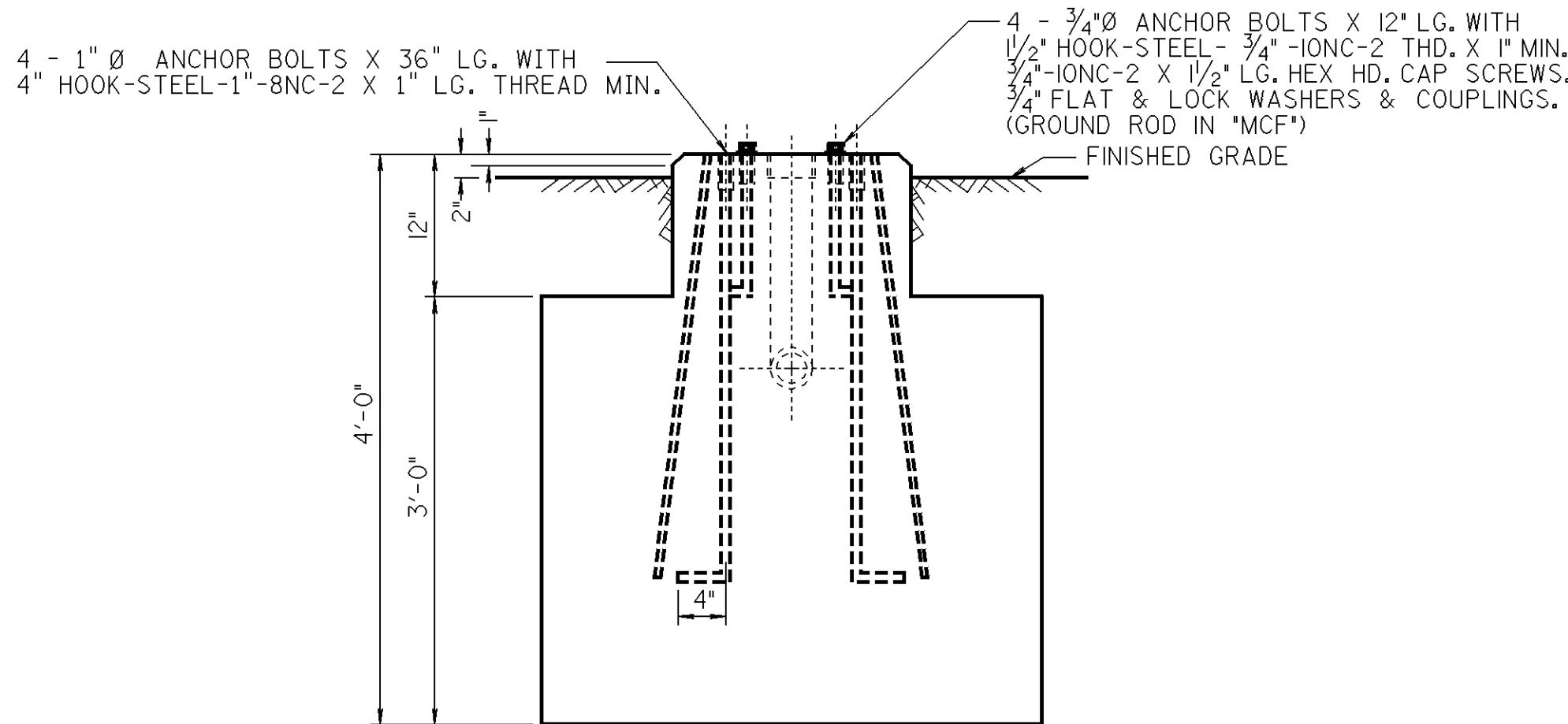
T-2101



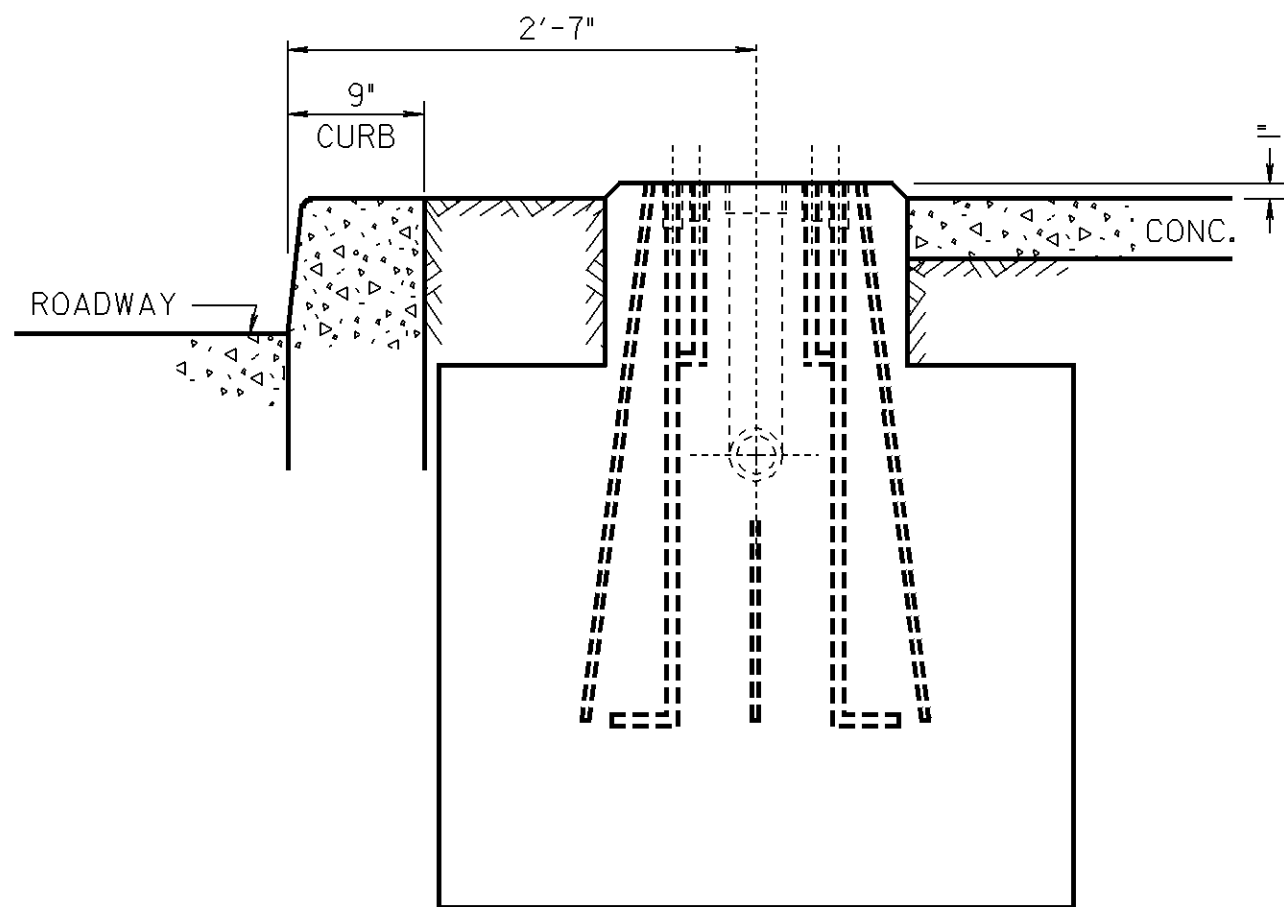
REFERENCE



PLAN VIEW

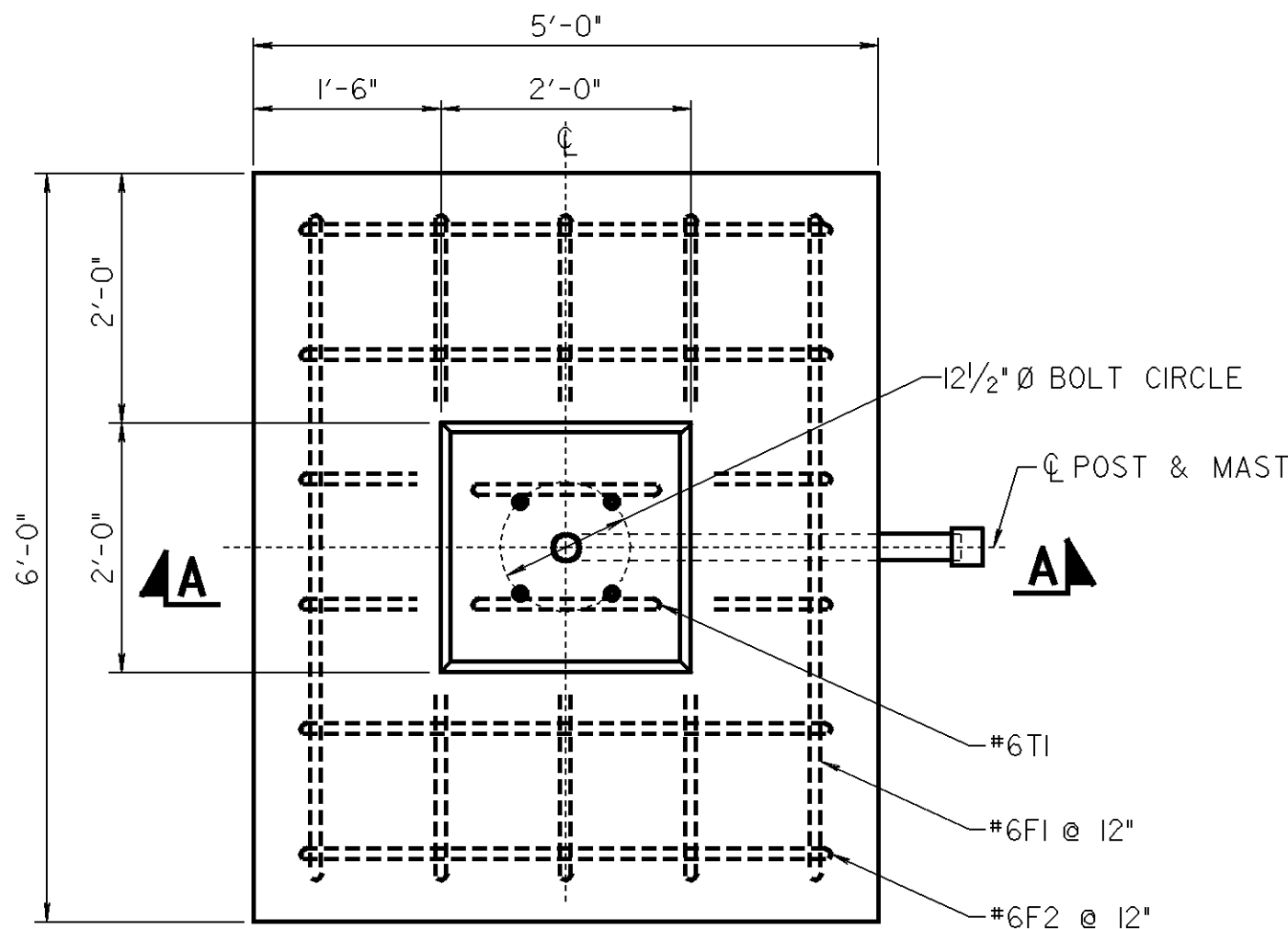


SIDE VIEW AT GRADE

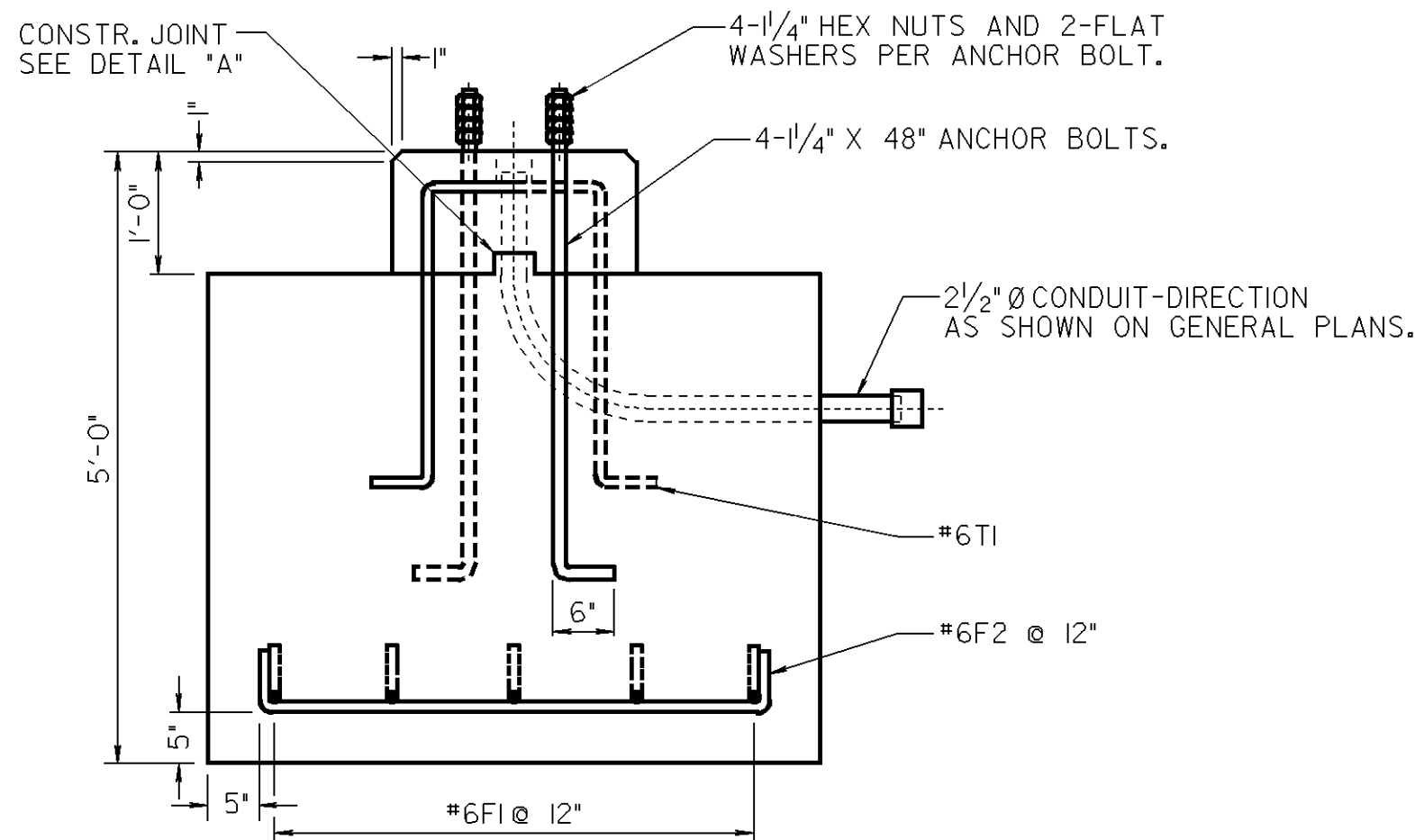


SIDE VIEW AT SIDEWALK

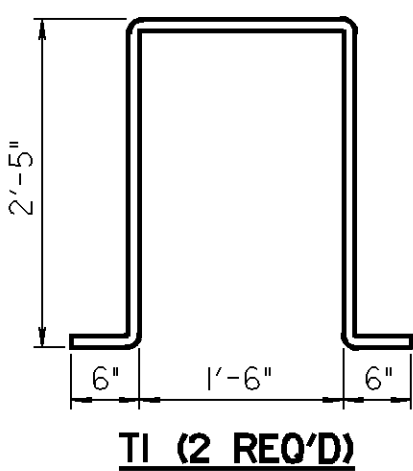
SCHOOL SIGN FOUNDATION TYPE 'SSF'



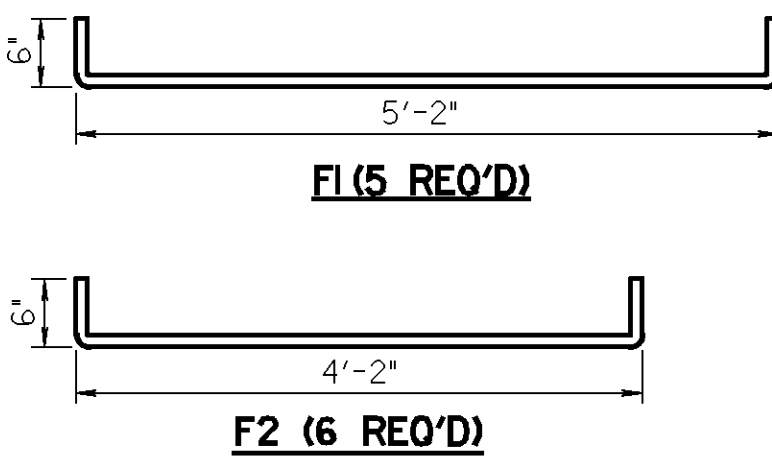
PLAN



SECTION A-A



TI (2 REQ'D)



F2 (6 REQ'D)

NOTES:

1. REINFORCING STEEL ASTM A615 GRADE 60 f_s=24,000 PSI.
2. ALL BAR DIMENSIONS ARE OUT TO OUT OF BARS.
3. ANCHOR BOLT PER ASTM A576 YIELD STRENGTH 50 KSI MIN.

DETAIL A

FOUNDATION TYPE 'SSF-A' 4.6 C.Y. CONC.

(SEE DWG. NO. T-15 FOR APPLICATION)

NEW JERSEY DEPARTMENT OF TRANSPORTATION

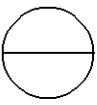
ELECTRICAL DETAILS

N.T.S.

SIGN FOUNDATIONS

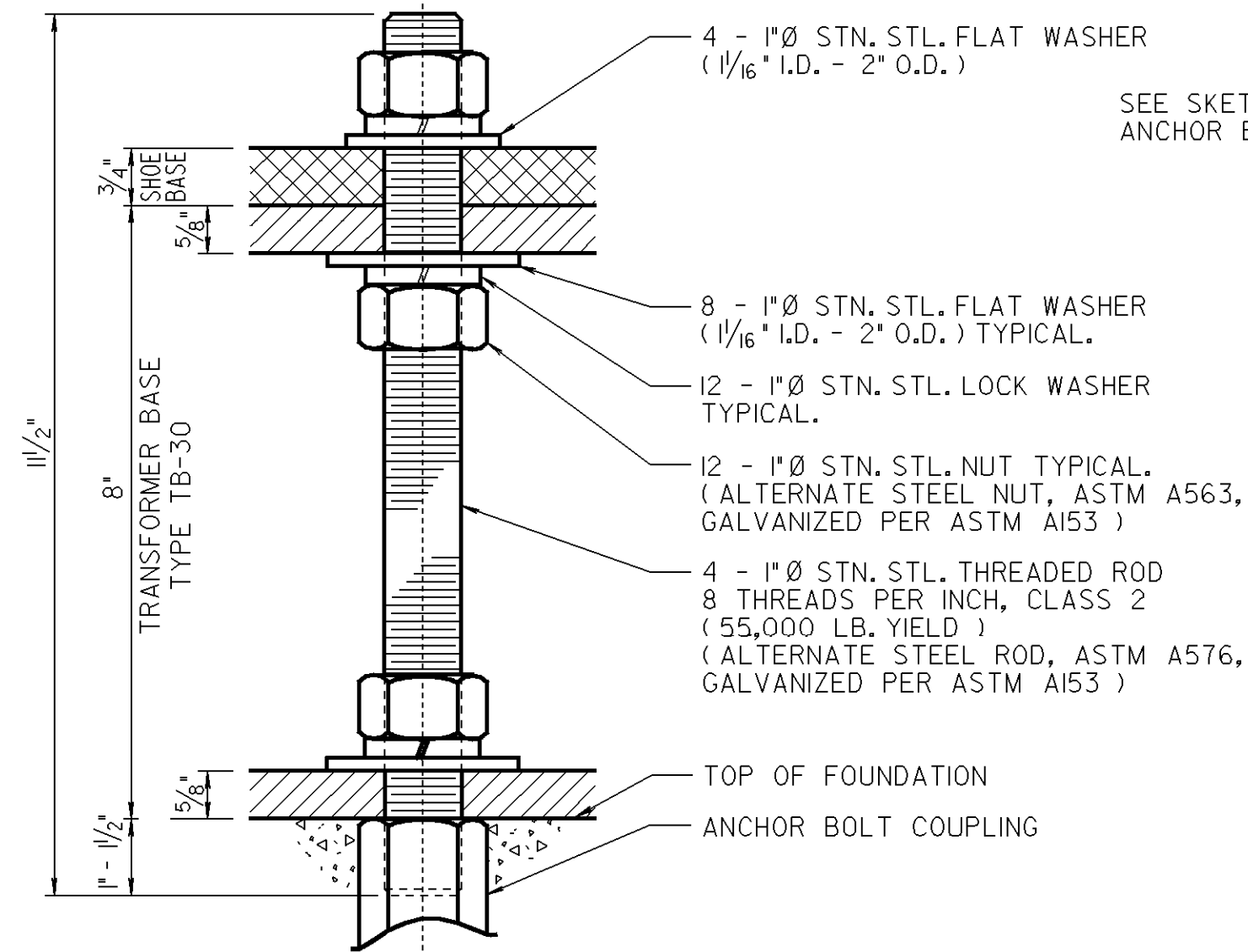
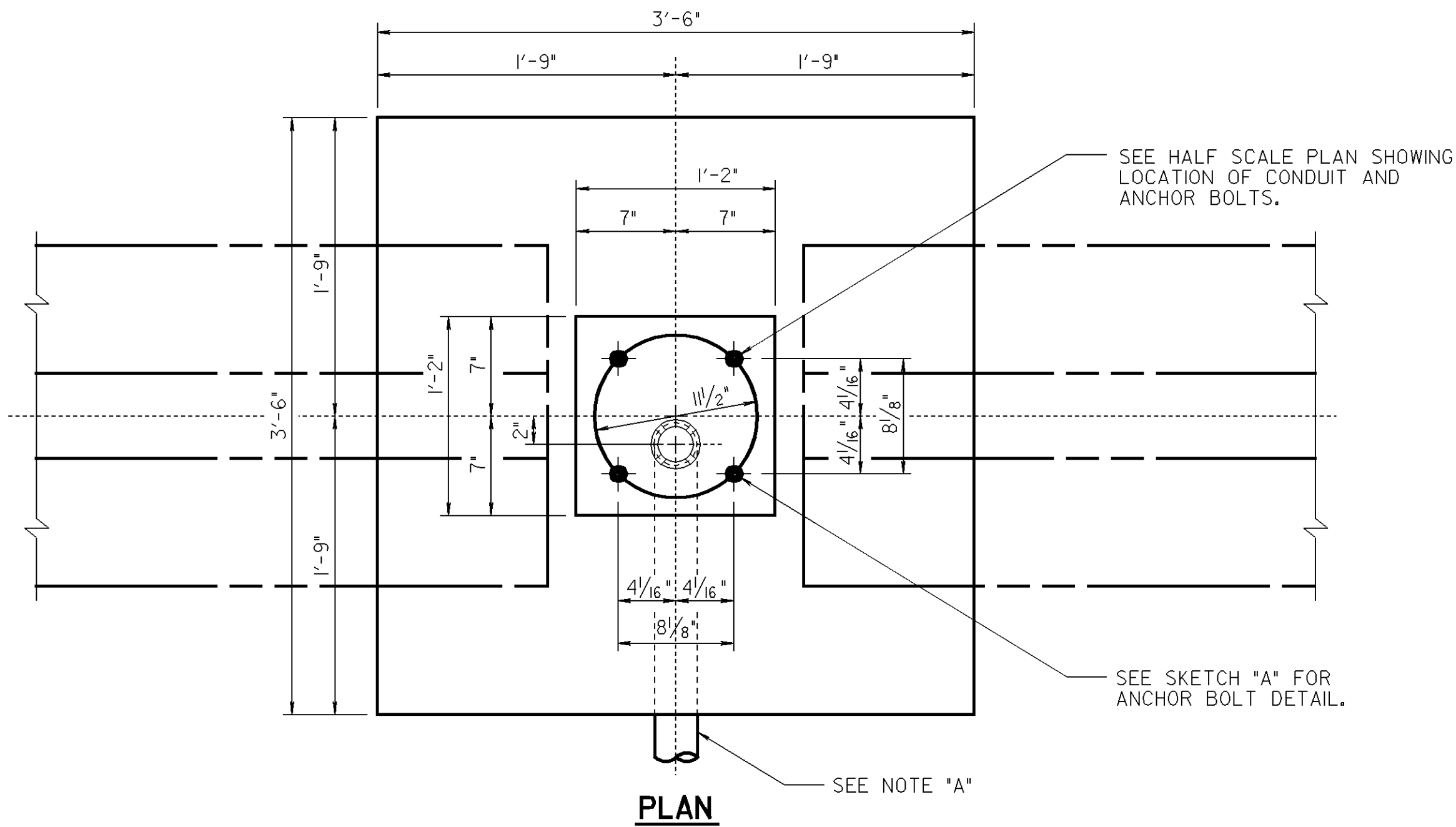
TYPE 'SSF' & 'SSF-A'

T-220I

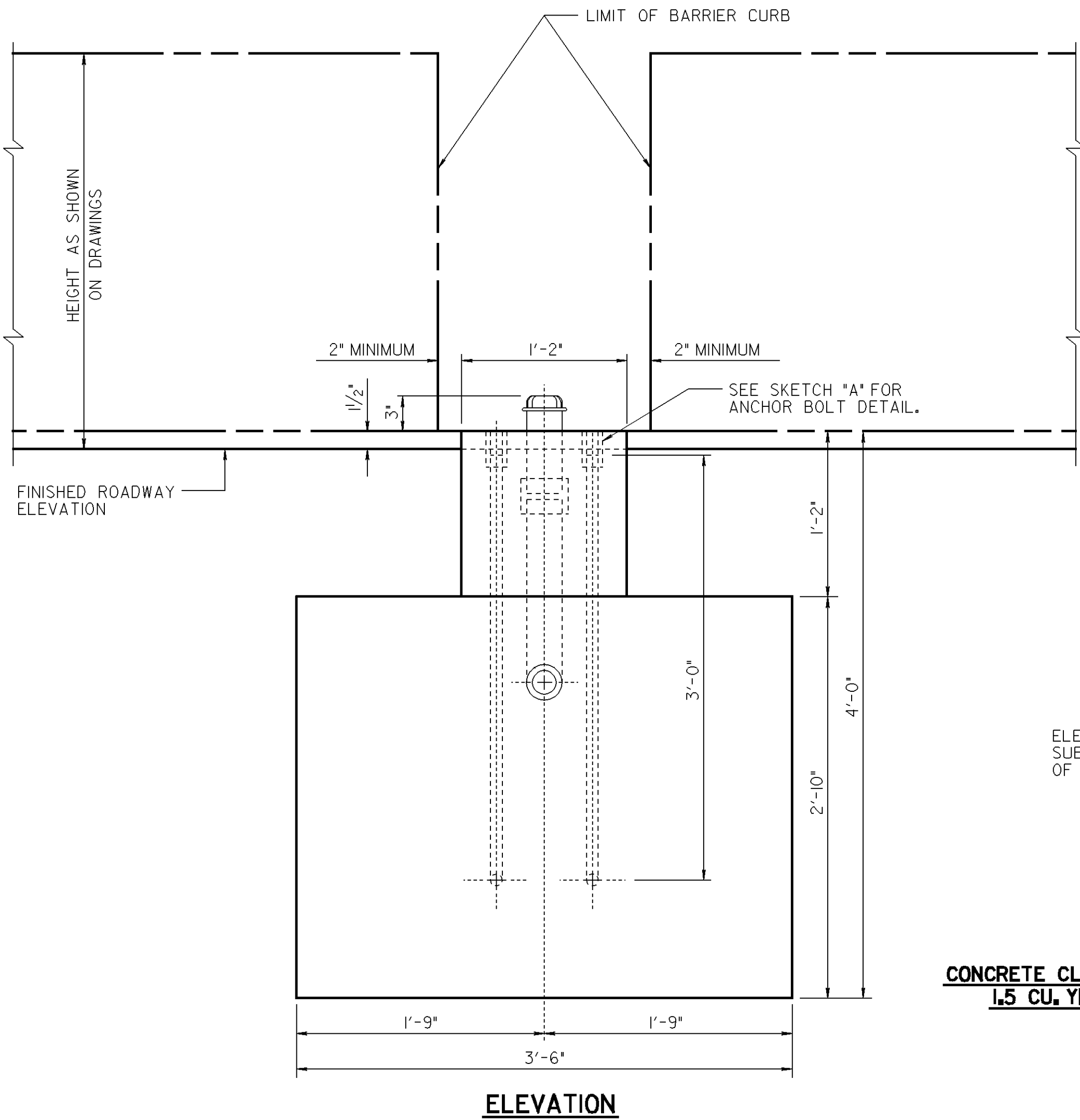
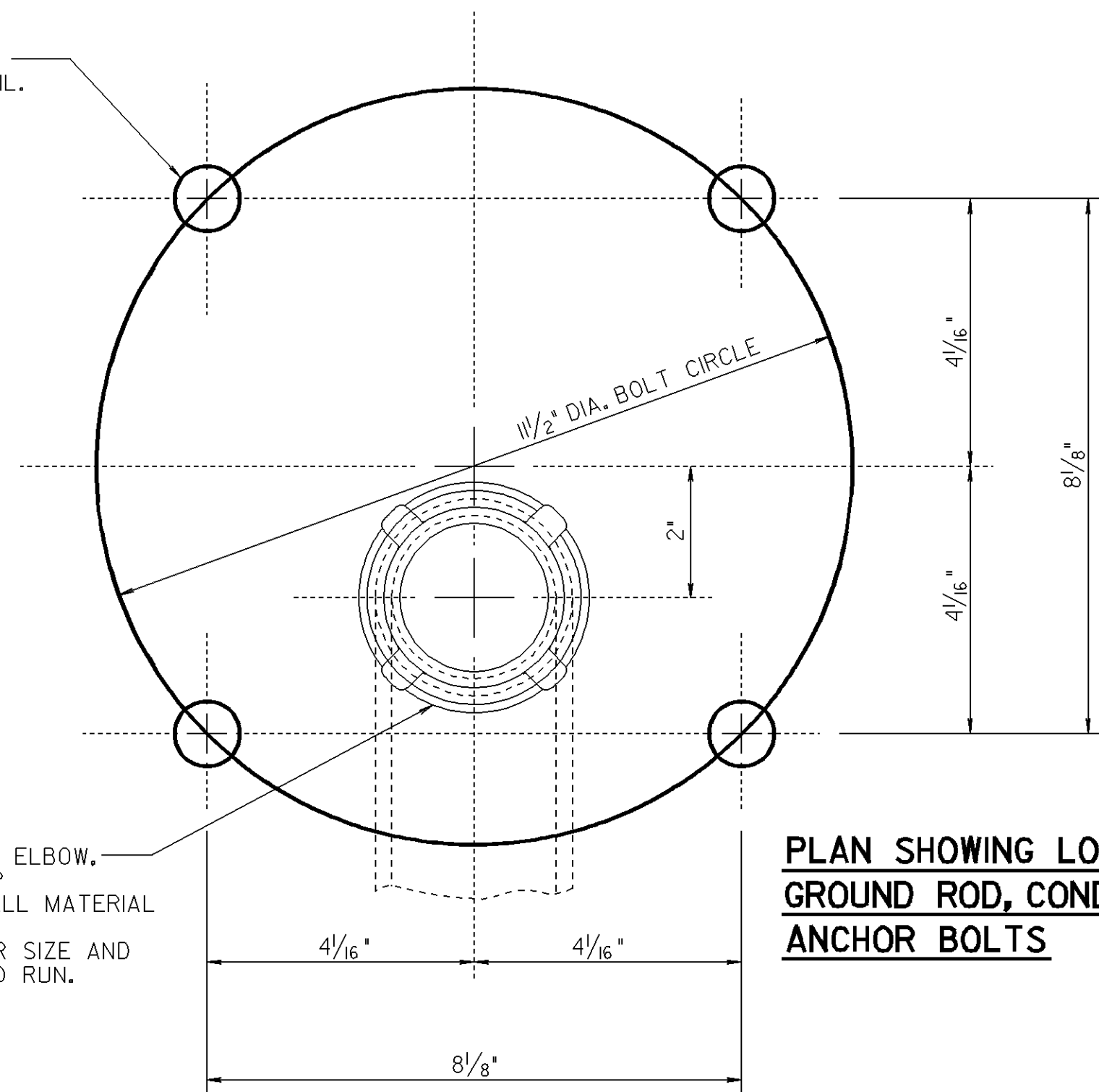


REFERENCE

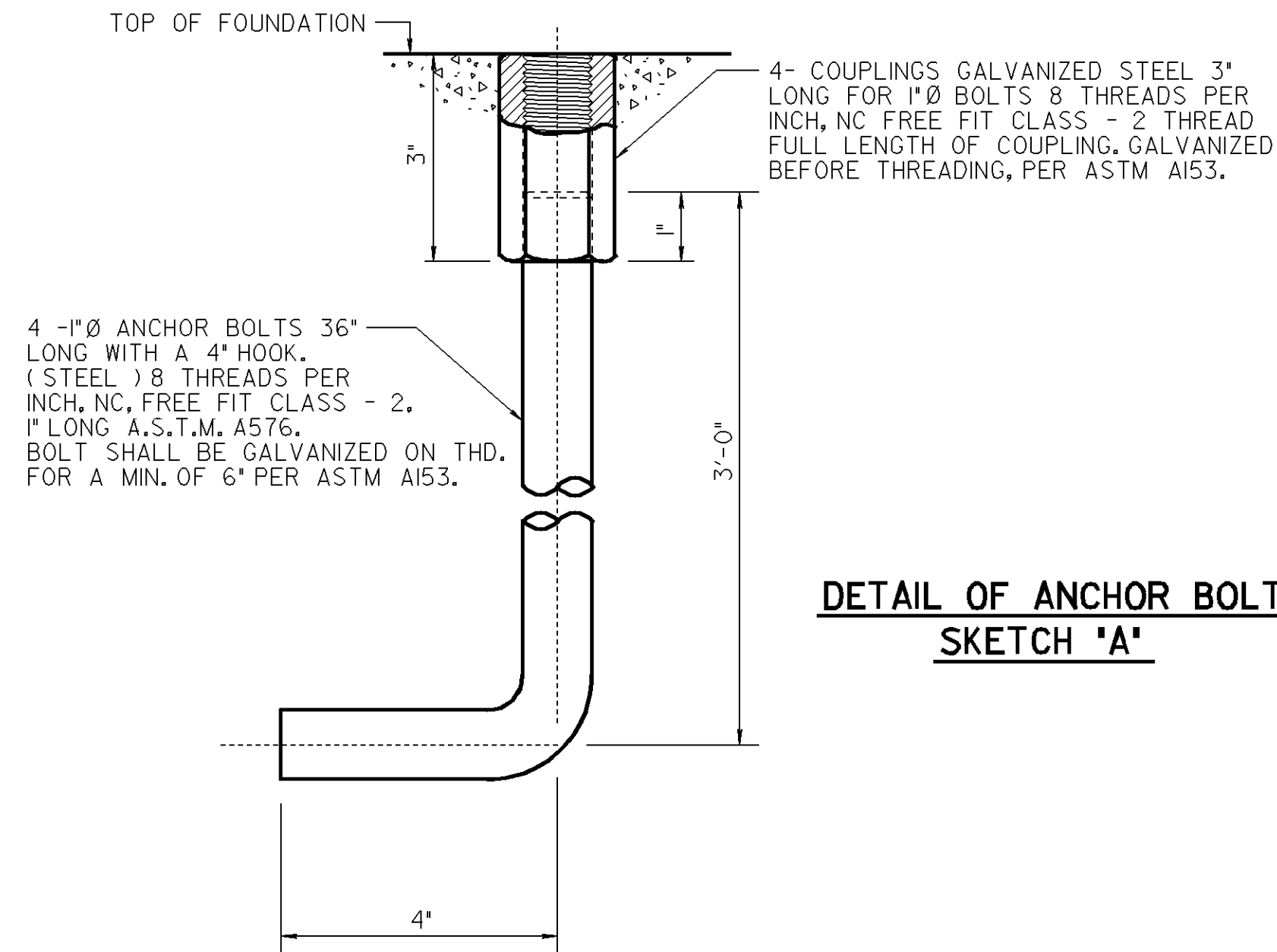
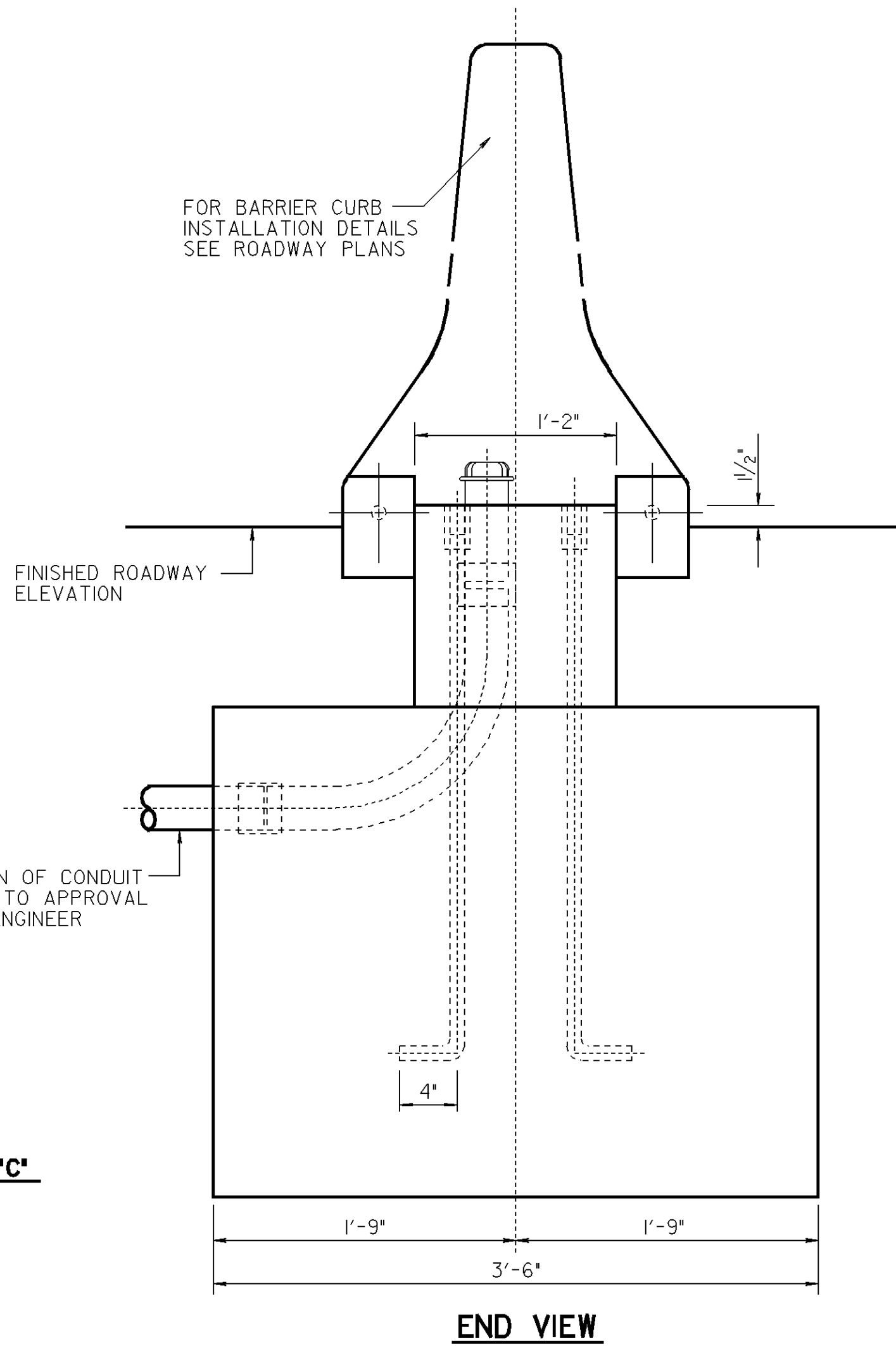
BDC 000-002 - ORIGINAL SHEET



NOTE "A"
RIGID METALLIC CONDUIT, ELBOW, COUPLING, APPROVED CAP BONDING BUSHING ETC. ALL MATERIAL GALVANIZED. SEE GENERAL PLANS FOR SIZE AND DIRECTION CONDUIT IS TO RUN.



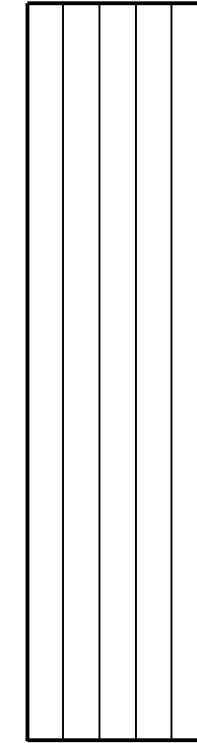
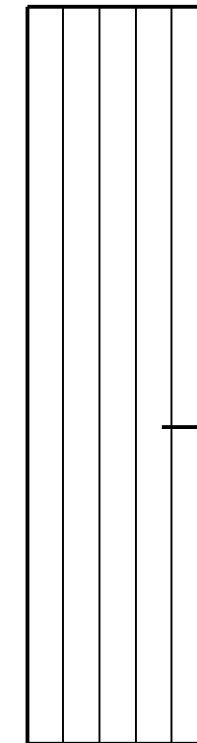
CONCRETE CLASS "C"
1.5 CU. YD'S



NOTE:
THROUGH BOLTING IS REQUIRED WITH TB-30 BASE INSTALLATION.

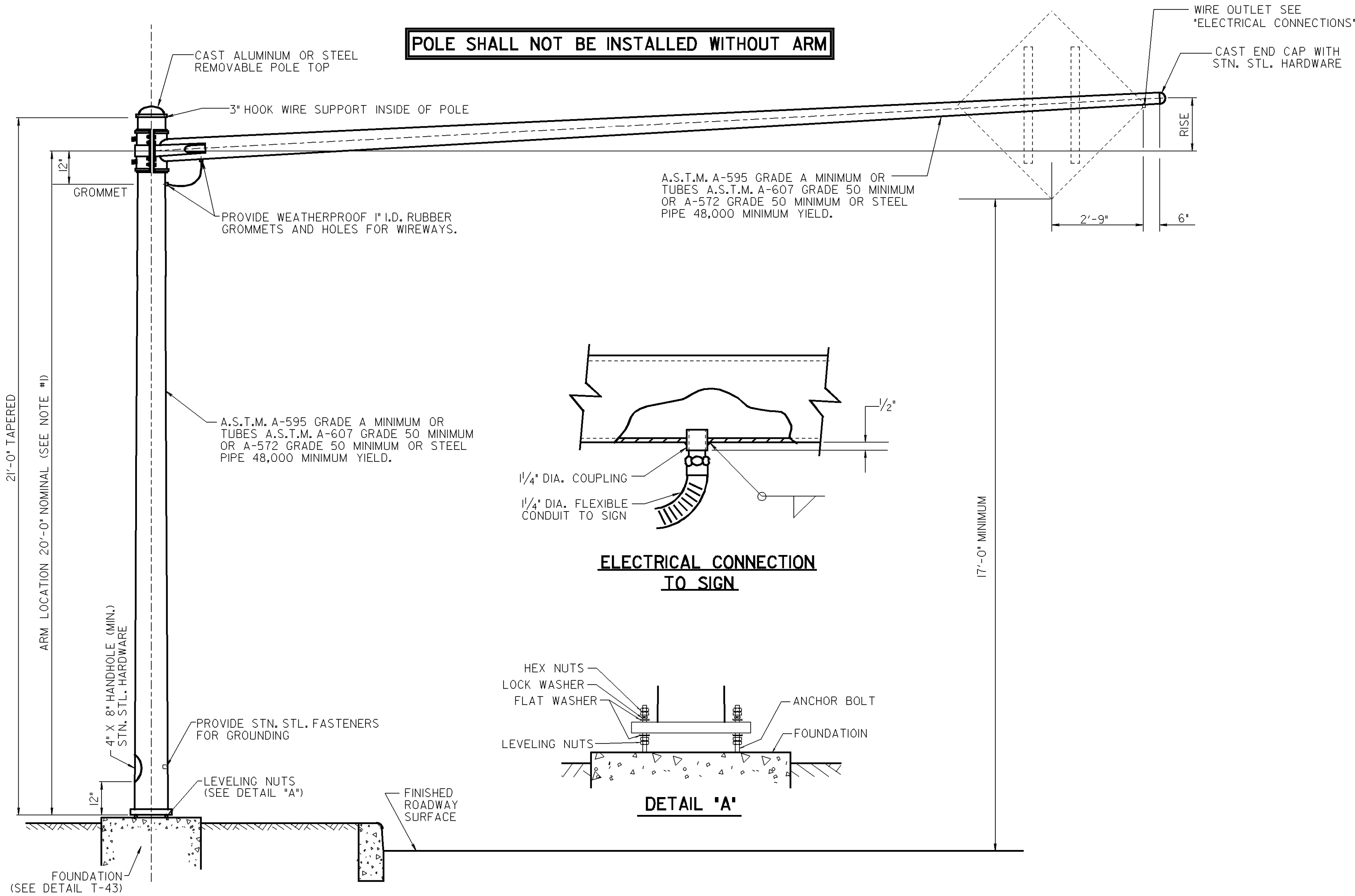
NEW JERSEY DEPARTMENT OF TRANSPORTATION	
ELECTRICAL DETAILS N.T.S.	
SPECIAL FOUNDATION "SFX" BARRIER CURB	
	T-2901

REFERENCE

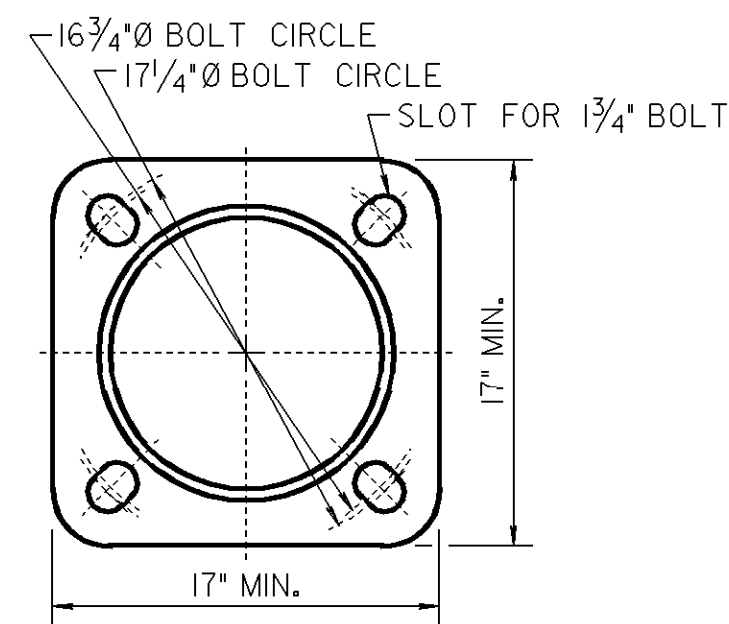


BDC 000-002 - ORIGINAL SHEET

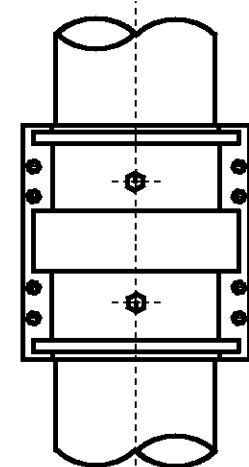
POLE SHALL NOT BE INSTALLED WITHOUT ARM



STEEL POLE AND ARM DETAIL FOR ELECTRIC SIGN-ROUND OR MULTISIDED

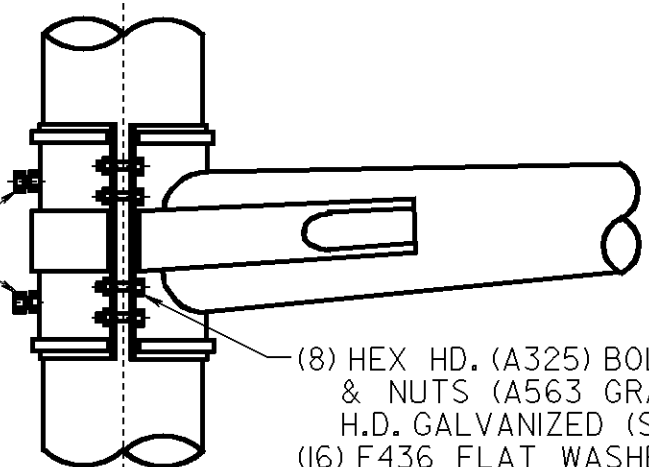


BASE DETAIL

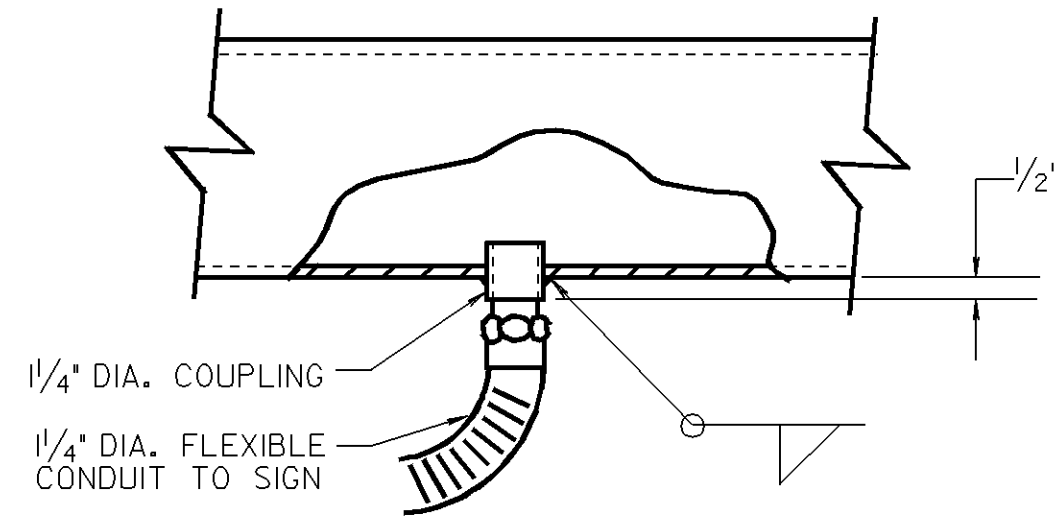


ARM CONNECTION DETAIL

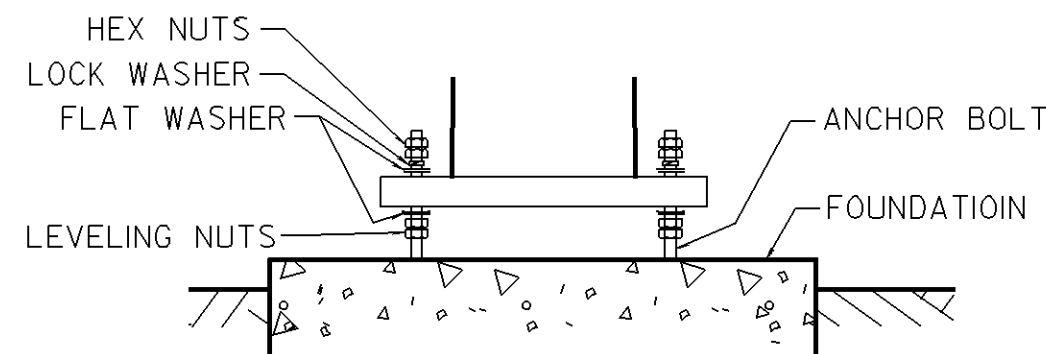
HEX HD. (A325) BOLTS
H.D. GALVANIZED



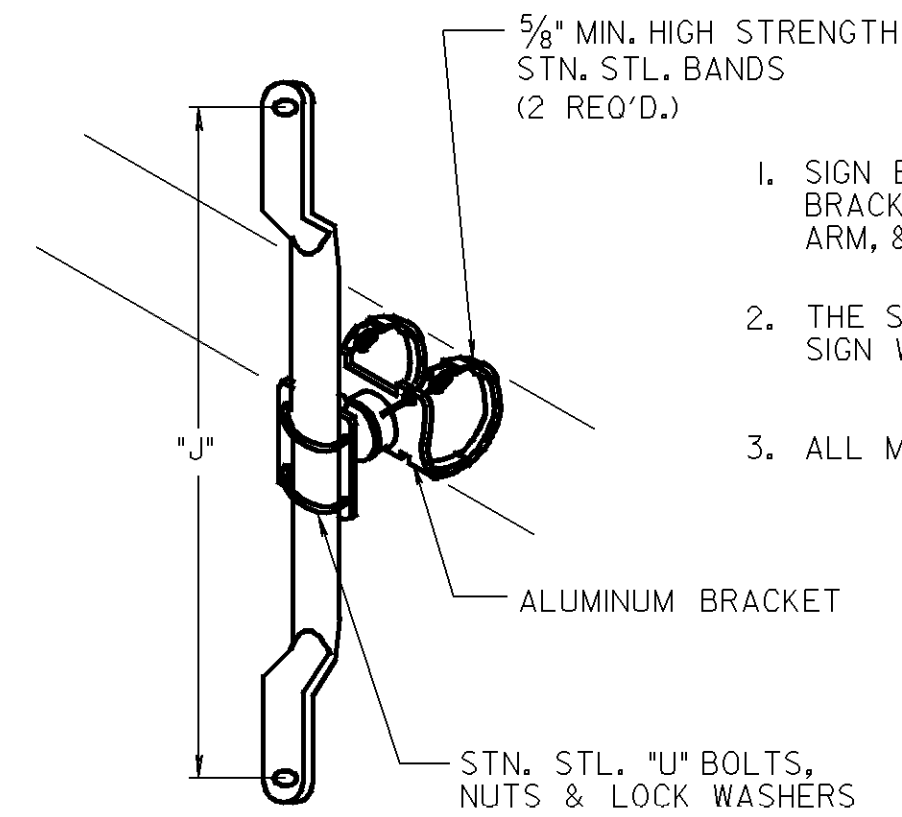
(8) HEX HD. (A325) BOLTS
& NUTS (A563 GRADE DH)
H.D. GALVANIZED (SEE NOTE #6)
(16) F436 FLAT WASHERS



ELECTRICAL CONNECTION
TO SIGN



DETAIL 'A'



1. SIGN BRACKET SHALL PERMIT ROTATIONAL ADJUSTMENT ABOUT BRACKET AXIS, VERTICAL & ROTATIONAL ADJUSTMENT ABOUT MAST ARM, & ROTATIONAL ADJUSTMENT RIGHT & LEFT IN VERTICAL PLANE.
2. THE SIGN BRACKET SHALL BE DESIGNED TO SUPPORT A 350 LB. SIGN WITH A PROJECTED AREA OF 19 SQ. FT.
3. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.

SIGN SIZE	DIM. "J"
24" X 24"	18"
30" X 30"	24"
36" X 36"	30"
48" X 48"	42"

ALUMINUM SIGN BRACKET DETAIL

NOTES:

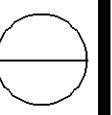
1. ALL POLES AND MAST ARMS SHALL BE HOT DIPPED GALVANIZED STEEL. FINISH IN ACCORDANCE WITH SPECIFICATIONS A.S.T.M. A-123.
2. STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE 1996 (16TH EDITION) AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, INCLUDING INTERIMS, THE 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, INCLUDING INTERIMS, AND THE 1998 NEW JERSEY DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, WITH MODIFICATIONS.
3. ARMS WILL SUPPORT ALL OF THE FOLLOWING:
FIXED SIGNALS AT THE END OF ARM-WT.=100# PROJ. AREA=8.4 S.F.
FIXED SIGNALS 1/3 OF LENGTH FROM END-WT.=100# PROJ. AREA=8.4 S.F.
FIXED SIGN MIDWAY BETWEEN SIG'S-WT.=35# PROJ. AREA=12 S.F.
4. POLE WILL SUPPORT ONE 45' AND ONE 30' MAST ARM WITH ABOVE LOADING AND A MINIMUM ARM SEPARATION OF 45°, OR ONE 65' ARM WITH ABOVE LOADING.
5. SIZE OF ARM SUPPLIED SHALL BE NOTED ON PLAN SHEET OR BID PROPOSAL.
6. ALL HEX NUTS, A-563 GRADE DH, SHALL BE INSTALLED BY "TURN OF THE NUT METHOD". SEAT NUT, THEN TORQUE MINIMUM 1/2 TURN.
7. ALL POLES AND ARMS MUST BE ROUNDED OR MULTISIDED. (MINIMUM 8 SIDED).
8. CLAMP FOR ALL MAST ARMS MUST BE CAPABLE OF ACCOMMODATING VARIOUS POLE DIAMETERS (9.7" TO 10.2") WITHOUT AFFECTING LOAD CHARACTERISTICS OF ASSEMBLED UNIT. ALL CLAMPS MUST BE DESIGNED FOR ATTACHMENT TO ROUND OR MULTISIDED POLES. CLAMP MUST BE CAPABLE OF ROTATIONAL ADJUSTMENT RIGHT AND LEFT FROM VERTICAL PLANE AND 360° ROTATIONAL ADJUSTMENT ABOUT MAST ARMS.
9. CERTIFICATION BY A LICENSED PROFESSIONAL ENGINEER SHALL BE SUPPLIED WHICH INCLUDES DESIGN CALCULATIONS THAT POLE AND ARM DESIGN MEETS ALL SPECIFIED LOADING REQUIREMENTS.
10. ALL TELESCOPIC JOINTS SHALL BE WELDED TOGETHER BY THE MANUFACTURER. FOR ARM LENGTH IN EXCESS OF 43 FEET, ONE TELESCOPIC JOINT WITH THRU BOLT MAY BE ASSEMBLED IN THE FIELD.
11. ANCHOR BOLTS, LOCK WASHERS, FLAT WASHERS, NUTS, AND LEVELING NUTS, SHALL BE SUPPLIED WITH EACH POLE. LEVELING NUTS SHALL BE ASTM A-307.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

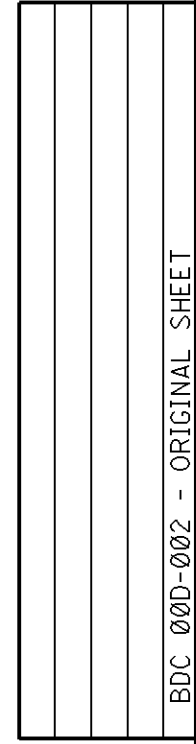
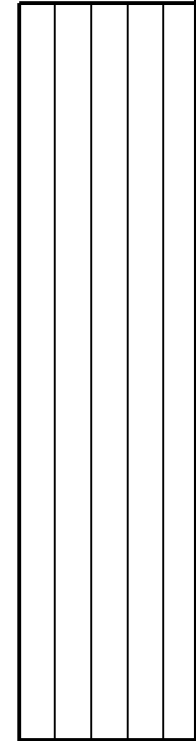
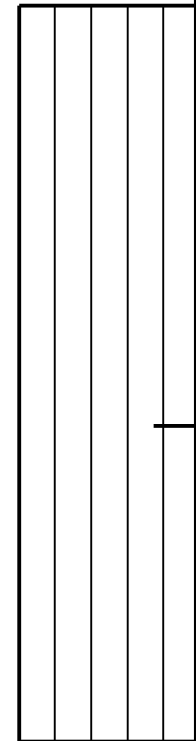
ELECTRICAL DETAILS
N.T.S.

STEEL POLE, AND ARM DETAILS
FOR ELECTRICAL SIGNS

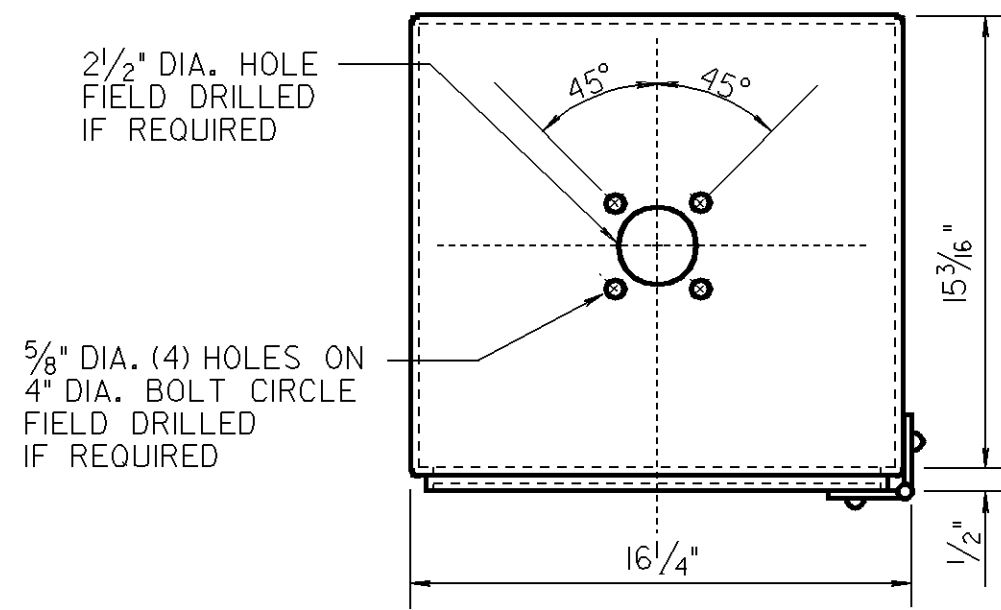
T-3401



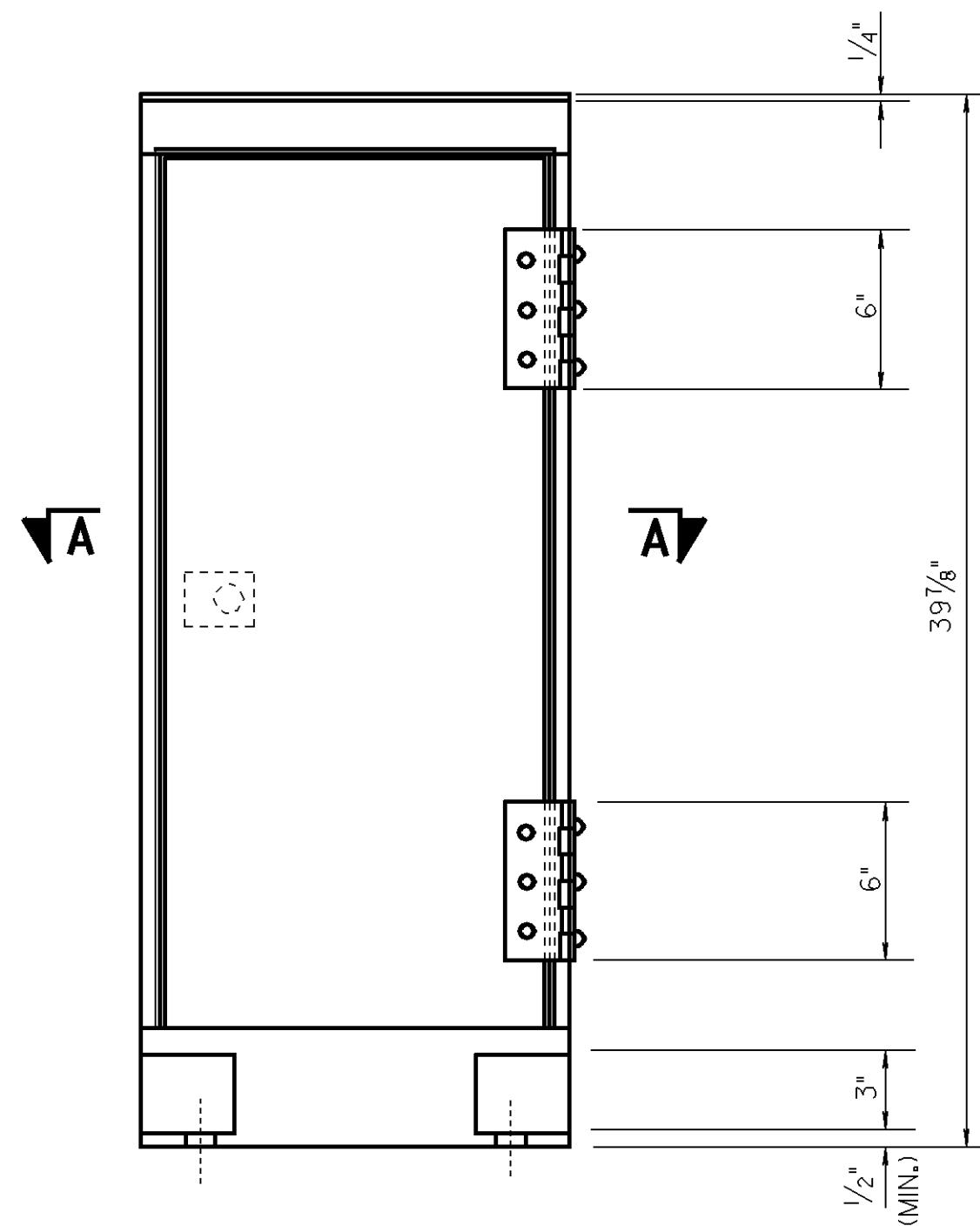
REFERENCE



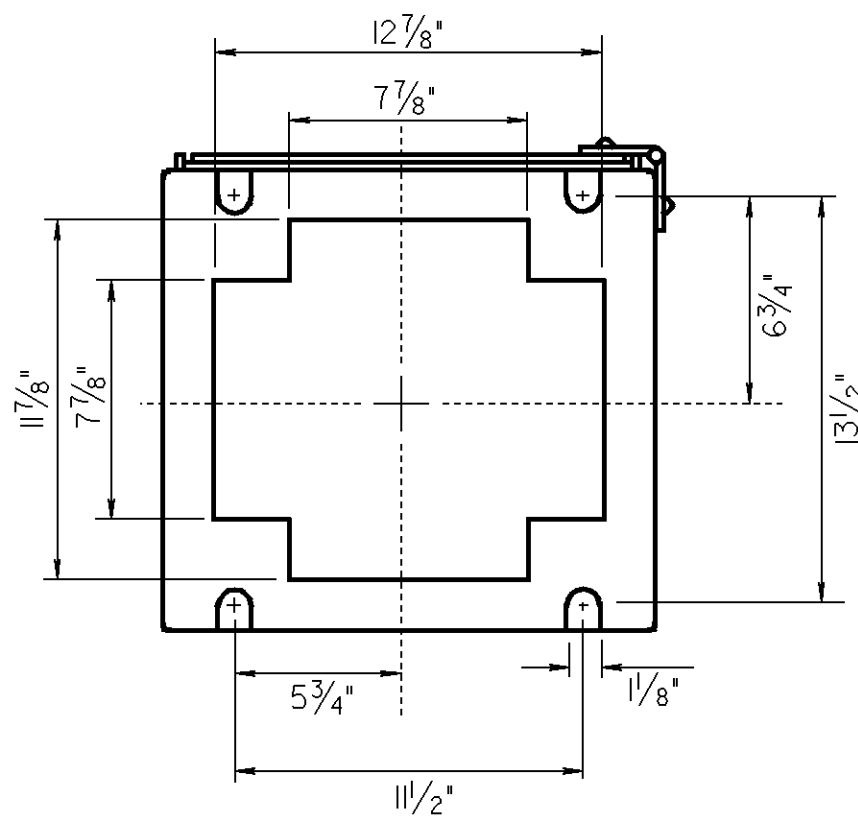
BDC 000-002 - ORIGINAL SHEET



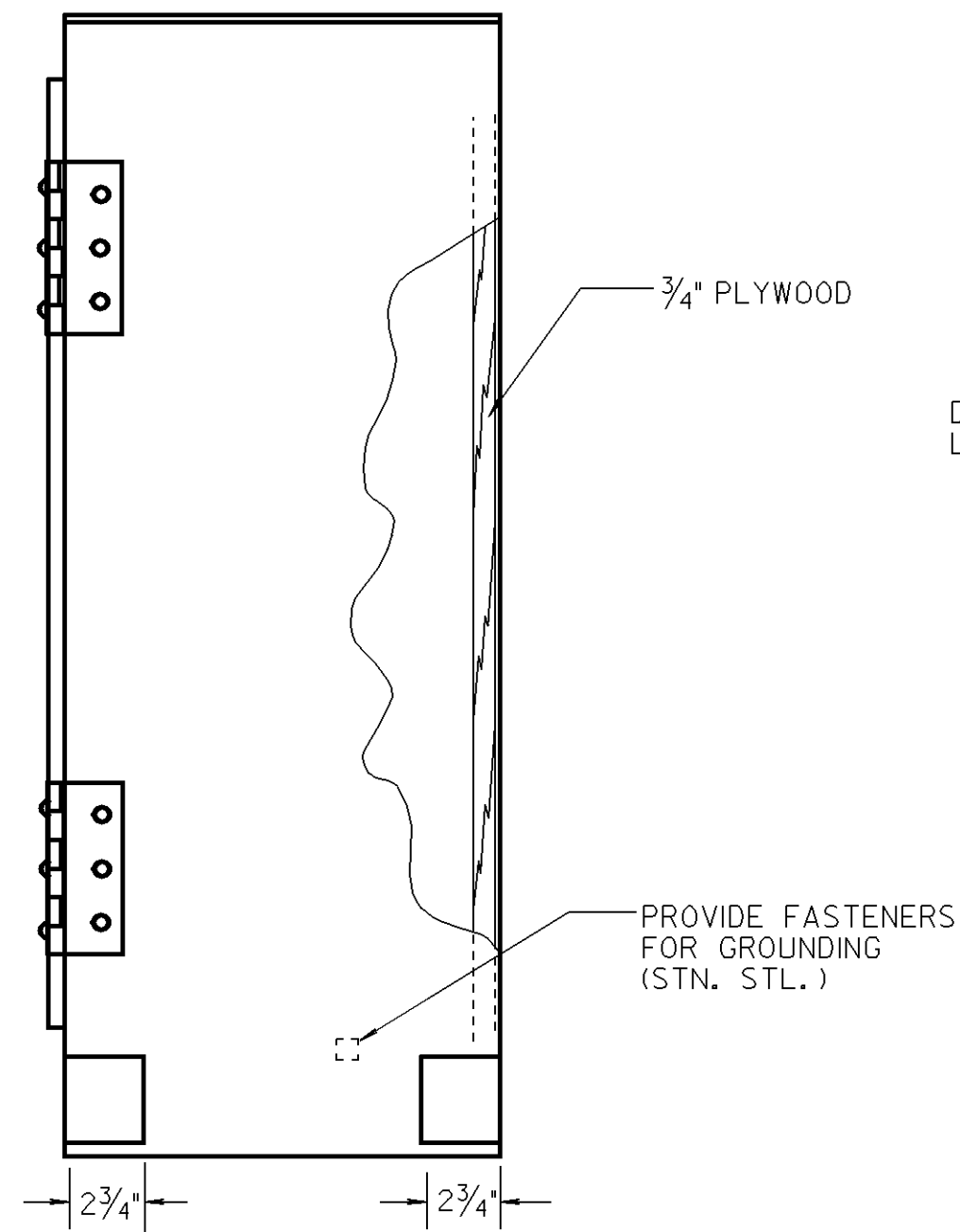
TOP VIEW



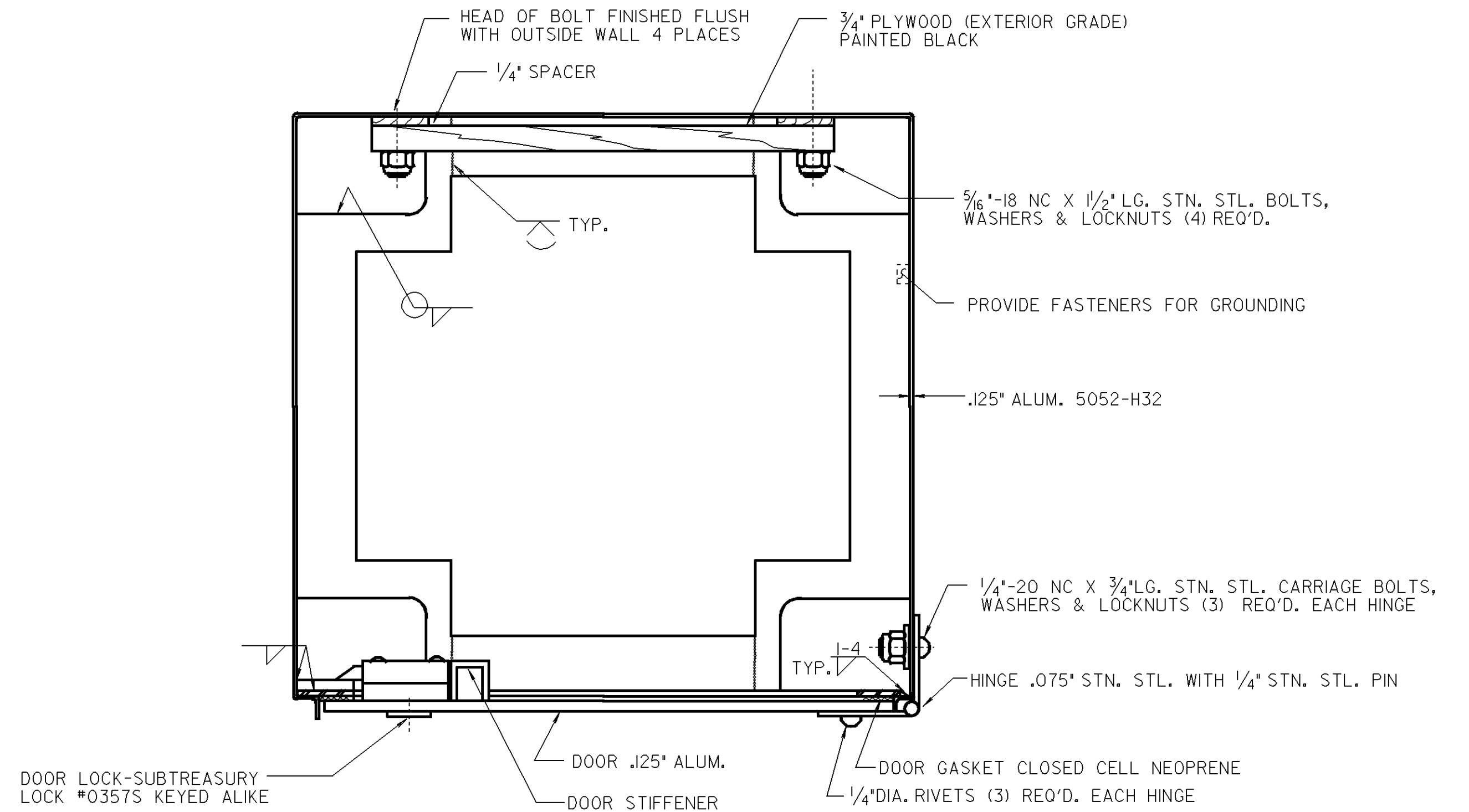
FRONT ELEVATION



BOTTOM VIEW



SIDE ELEVATION



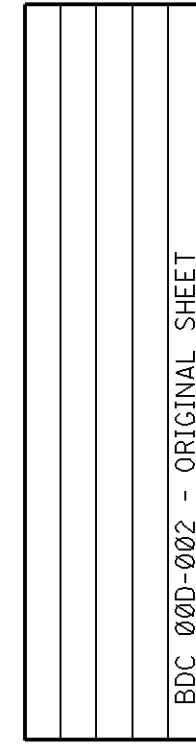
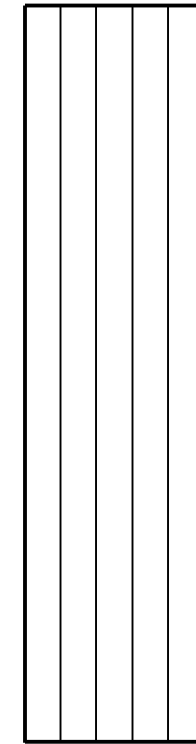
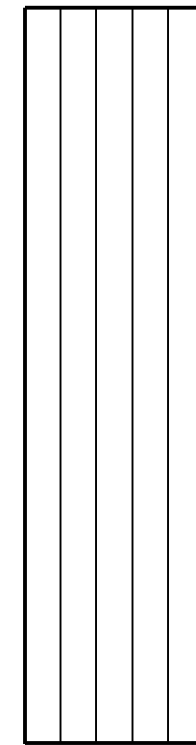
SECTION A-A

NOTES

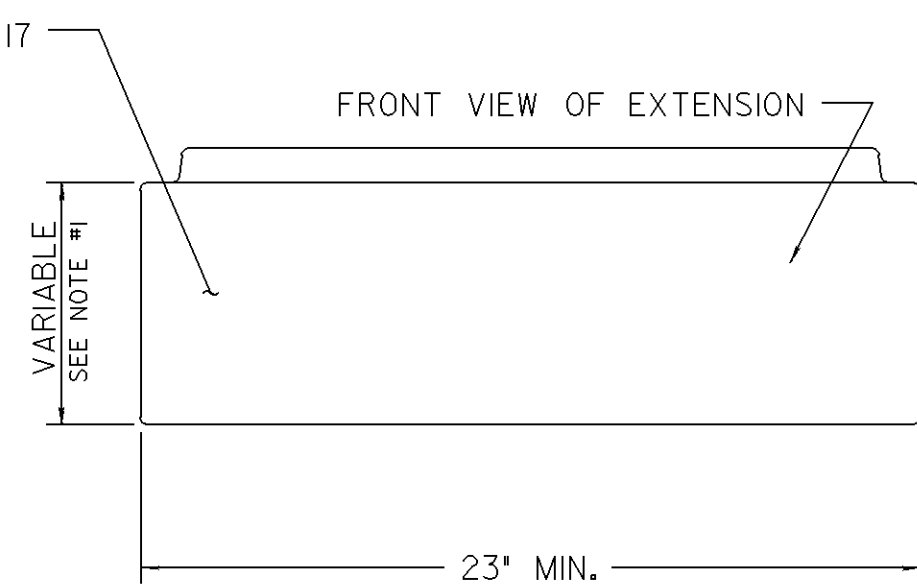
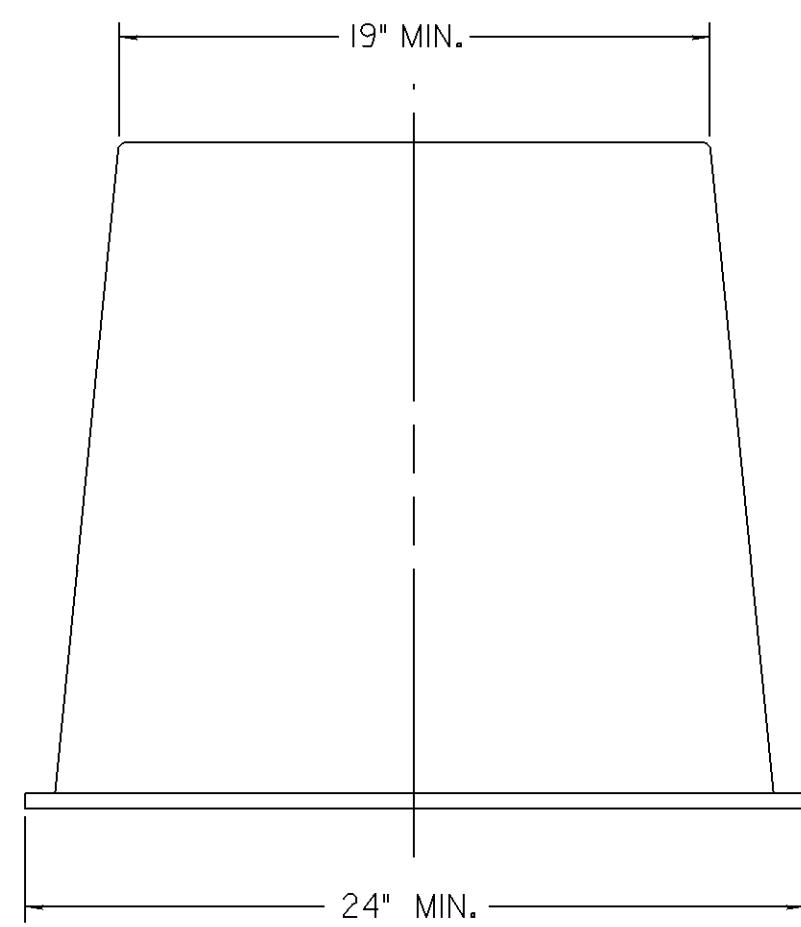
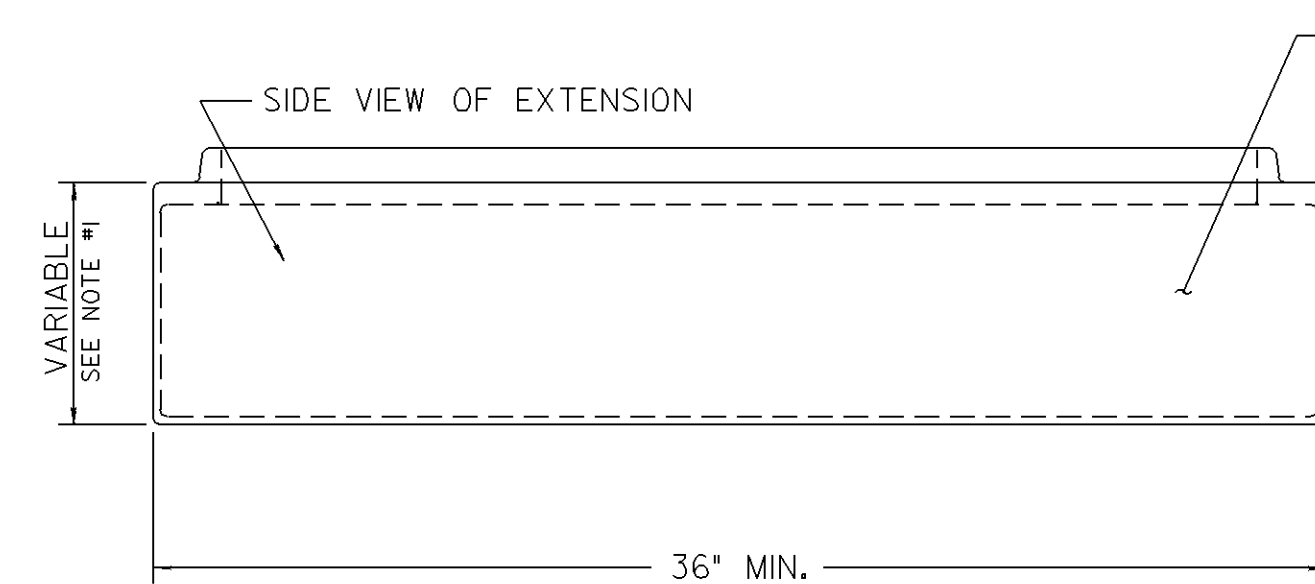
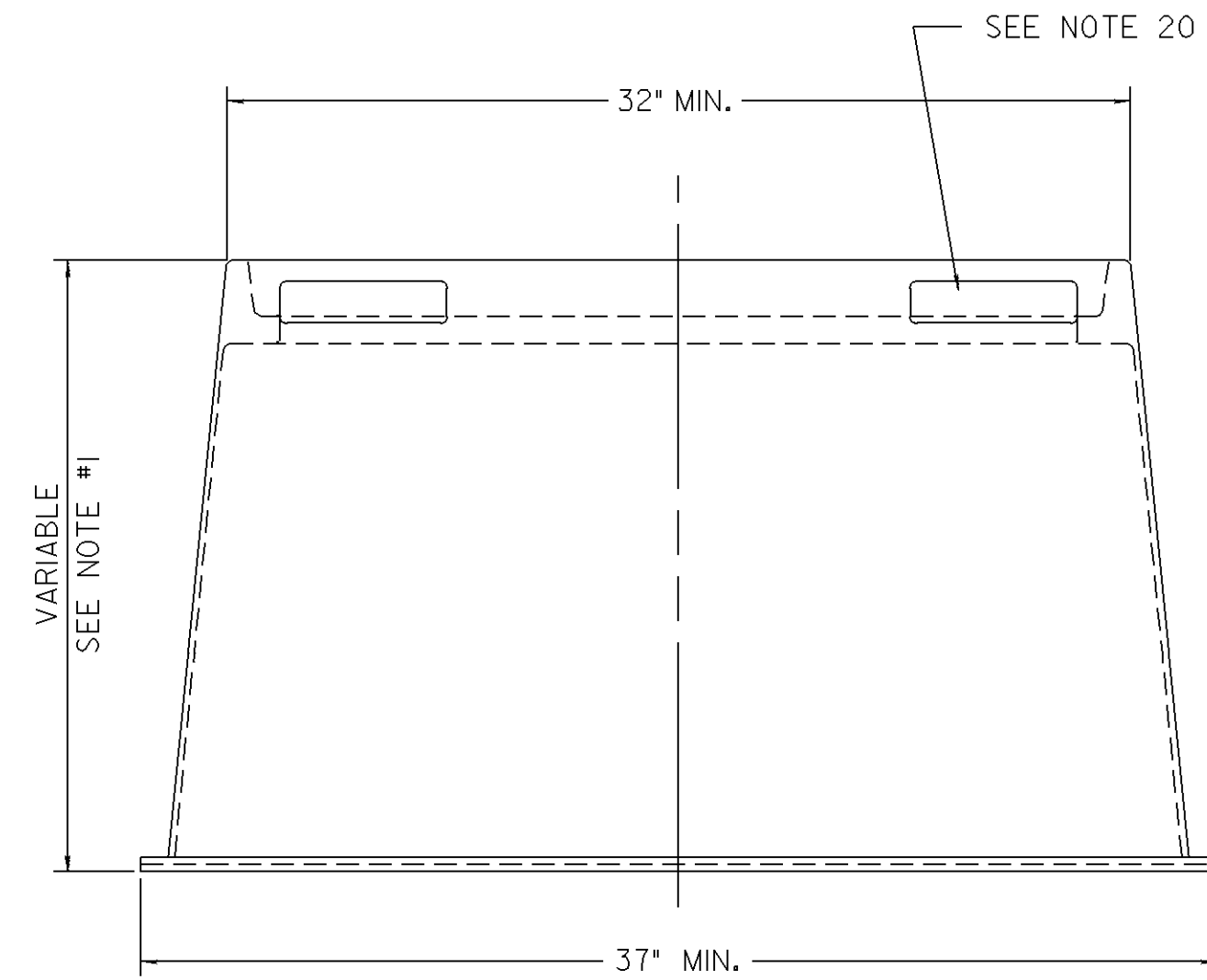
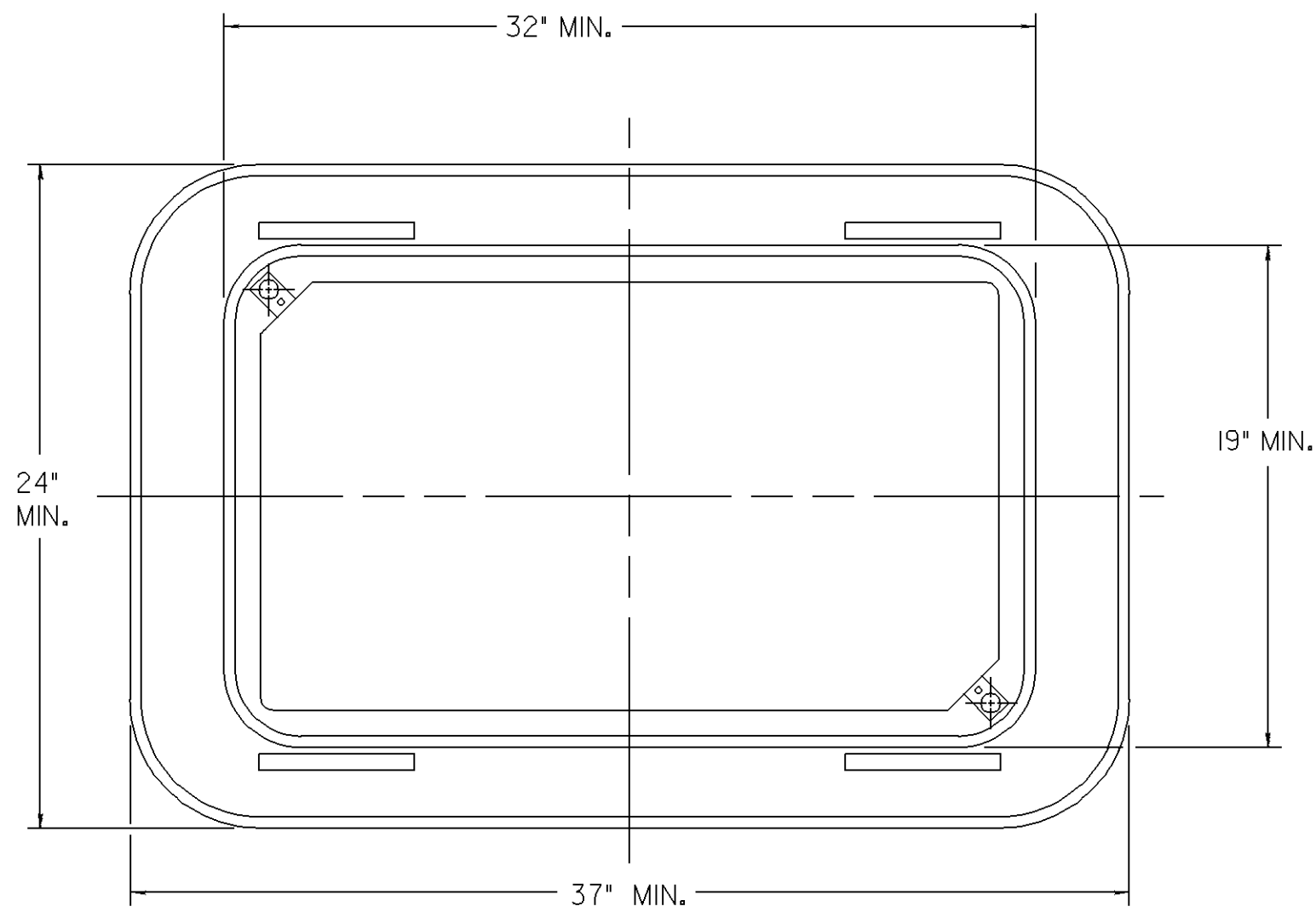
1. ALL DIMENSIONS SHOWN IN INCHES AND SHALL BE $\pm 1/32$ " TOLERANCE.
2. CABINET CONSTRUCTED OF FORMED ALUMINUM ALLOY 5052-H32 .125 INCH THICK WELDED WHERE SHOWN.
3. CABINET SHALL BE UNPAINTED.
4. ALL BOLTS SHALL BE VANDAL PROOF TYPE.
5. ANY VARIATIONS TO THE DIMENSIONS MUST BE APPROVED IN WRITING BY THE N.J.D.O.T. ENGINEER BEFORE FABRICATION.
6. NO CHANGES IN ANCHORAGE DIMENSIONS ARE PERMITTED.
7. COMPONENT LOCATION FOR METER PAN AND METER (IF REQUIRED) ARE SHOWN FOR METER CABINET TYPE "T" SEE DWG. NO. T-19.
8. IF METER IS NOT REQUIRED, INSTALL 1/4" I.D. SEALTITE FLEXIBLE AND 1/4" I.D. NIPPLE FROM REDUCER COUPLING TO MAIN BREAKER PANEL.
9. THE BASE OF THE CABINET SHALL BE 1/2" MINIMUM THICKNESS.
10. AS AN ALTERNATE A STAINLESS STEEL PIANO TYPE HINGE MAY BE UTILIZED.

NEW JERSEY DEPARTMENT OF TRANSPORTATION	
ELECTRICAL DETAILS	
N.T.S.	
METER CABINET DETAILS	
FABRICATED TYPE	
	T-350I

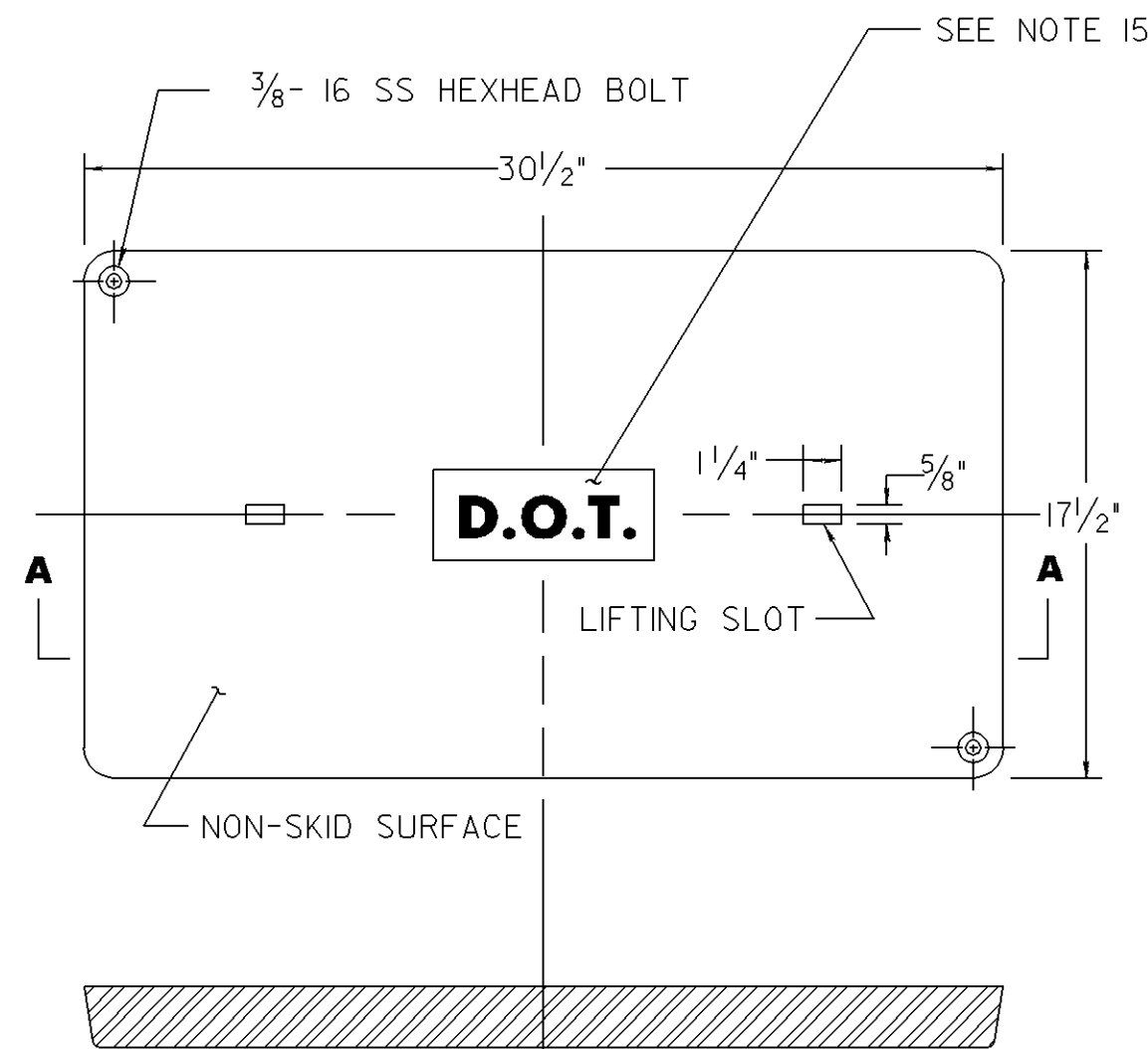
REFERENCE



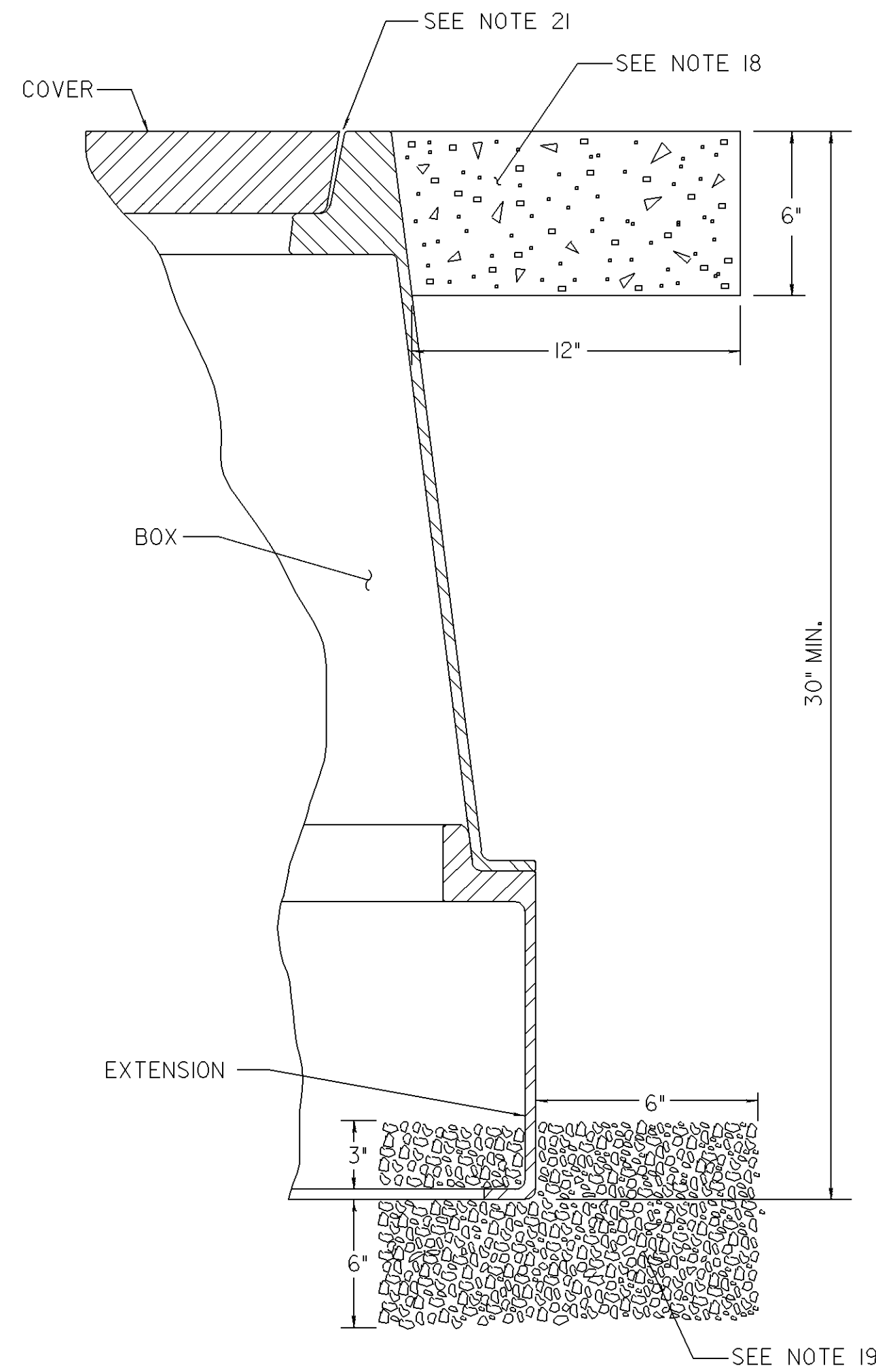
BDC 000-002 - ORIGINAL SHEET



THIS BOX SHALL NOT BE INSTALLED
IN THE TRAVELED WAY AND SHOULDERS.



COVER
SECTION A-A



BASIC WALL LAYOUT

JUNCTION BOX SHALL ONLY BE
USED FOR LOOP INSTALLATION

NOTES:

1. THE BOX DEPTH SHALL BE 18" MINIMUM AND THE EXTENSION DEPTH SHALL BE 8" MINIMUM. THE COMBINATION OF BOX AND ONE EXTENSION SHALL HAVE A MINIMUM DEPTH OF 30". AS AN ALTERNATE, A SINGLE SECTION JUNCTION BOX MAY BE SUPPLIED.
2. THE BOX SIDES SHALL BE TAPERED INWARD TOWARD THE TOP FOR STABILITY. BOX SHALL BE PROVIDED WITH A BOTTOM FLANGE AT LEAST 1/4" WIDE TO PREVENT SETTLING IN FIRM SOIL WHEN SUBJECTED TO SPECIFIED LOADS. TOP REGION OF THE BOX SHALL BE CONFIGURED TO PROVIDE "KEYING-IN" AND LOCK THE BOX IN CONCRETE OR BLACKTOP WHEN IT IS INSTALLED. THREADED INSERTS PROVIDED FOR SECURING THE LID SHALL BE STAINLESS STEEL.
3. THE COVER SHALL BE FASTENED TO THE BOX WITH TWO 3/8" -16NC STAINLESS STEEL HEX BOLTS, LOCATED AT OPPOSITE CORNERS OF THE COVER. BOLTS SHALL BE CAPTIVE TO LID.
4. COVER SURFACE SHALL BE SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5.
5. EXTENSION SHALL FIT THE BOTTOM OF THE BOX; ITS DESIGN SHALL BE SUCH AS TO REINFORCE THE BOX AGAINST SIDE LOADS WHEN THE TWO ARE STACKED TOGETHER.
6. THE BOX ASSEMBLY SHALL BE DESIGNED FOR A8 LOADING AS SPECIFIED IN ASTM C857-87 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES." THE MINIMUM ULTIMATE LOAD SHALL BE 20,800 LB. MINIMUM.
7. DESIGN SHALL BE BASED ON A MINIMUM SAFETY FACTOR OF 2.0 FOR WHEEL LOADS AND 2.0 FOR SOIL LOADS. COVER DEFLECTION AT DESIGN LOADS SHALL NOT EXCEED 0.5 INCHES OF NET COVER DEFLECTION WIDTH AND SIDE WALL DEFLECTION SHALL NOT EXCEED 0.25 INCHES PER FOOT OF COVER WIDTH AND SIDE WALL DEFLECTION SHALL NOT EXCEED 0.25 INCHES PER FOOT OF BOX LENGTH. COMPLIANCE TESTING, IF REQUIRED, SHALL BE PERFORMED ACCORDING TO CURRENT WESTERN UNDERGROUND COMMITTEE GUIDE No. 3.6, NON-CONCRETE ENCLOSURE.
8. ANY POINT ON THE COVER, BOX OR EXTENSION SHALL WITHSTAND A 70 FT. LBS. IMPACT ADMINISTERED WITH A C-TUP ACCORDING TO ASTM D-2444.
9. A MINIMUM OF 20 YEARS LIFE EXPECTANCY IS REQUIRED. ACCELERATED SERVICE TESTS IN ACCORDANCE WITH ASTM METHOD D-756-56 PROCEDURE E, SHALL BE ACCEPTED AS A SATISFACTORY ALTERNATIVE.
10. THE JUNCTION BOX SHALL BE MADE OF FIBER GLASS, RPM/FRP COMBINATION OR POLYMER CONCRETE AND THE COVER SHALL BE MADE OF FIBER GLASS REINFORCED POLYMER CONCRETE.
11. THE MATERIALS UTILIZED IN THE MANUFACTURE OF JUNCTION BOXES AND COVERS SHALL BE RESISTANT TO CHEMICALS COMMONLY FOUND IN THE SOIL OR IN THE OPERATING ENVIRONMENT. THEY MUST ALSO BE RESISTANT TO SUNLIGHT AND UV IN ACCORDANCE WITH ASTM G53. CHEMICAL RESISTANCE PROPERTIES SHALL BE DETERMINED USING ASTM D543 AND ASTM D570 FOR WATER ABSORPTION.
12. THE MATERIALS SHALL BE RESISTANT TO FIRE, INCLUDING DIRECT FLAME AND HEAT IN ACCORDANCE WITH ASTM D635.
13. THE JUNCTION BOX SHALL BE USABLE, WITHOUT ANY DETRIMENTAL EFFECT IN ANY KIND OF CLIMATE, IN A TEMPERATURE RANGE OF -40°F TO +149°F. SUDDEN TEMPERATURE CHANGES SHALL NOT AFFECT THE HANDHOLE INCLUDING ITS LIFE EXPECTANCY.
14. THE COLOR OF THE COVER AND THAT PART OF THE BOX THAT IS VISIBLE WHEN IT IS INSTALLED, SHALL BE "CONCRETE GREY."
15. IDENTIFICATION OF THE COVER SHALL BE PERMANENTLY MOLDED ON THE TOP SURFACE WITH DOT. JUNCTION BOX COVER WITHOUT D.O.T. LOGO SHALL BE UTILIZED FOR ALL LOCAL SIGNALIZED INTERSECTIONS AND BRIDGES ON LOCAL ROADS.
16. ALL CONDUIT ENTRANCES INTO THE JUNCTION BOX SHALL BE FIELD DRILLED WITH A HOLE SAW OR PUNCHED OUT USING A HYDRAULIC HOLE PUNCH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
17. ALL CONDUIT OPENINGS SHALL BE SANDED. AFTER THE CONDUITS ARE INSTALLED, ALL CONDUIT ENTRANCES SHALL BE SEALED WITH AN EPOXY PUTTY OR SILICON CAULK.
18. IN GRASS OR DIRT AREAS, A CONCRETE PAD, CLASS "C", SHALL BE POURED AROUND THE TOP OF THE JUNCTION BOX.
19. COMPACTED 3/4" GRAVEL OR BROKEN STONE REQUIRED.
20. A CONCRETE LOCK-IN FEATURES SHALL BE PROVIDED AT THE TOP OF THE BOX. ACTUAL DESIGN MAY VARY PER MANUFACTURER.
21. THE GAP FROM THE EDGE OF THE COVER TO THE INSIDE EDGE OF THE BOX SHALL BE A MAXIMUM OF 1/8" + 1/16".
22. TOP OF THE POLYMER CONCRETE COVER SHALL SET FLUSH WITH THE TOP OF THE JUNCTION BOX.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

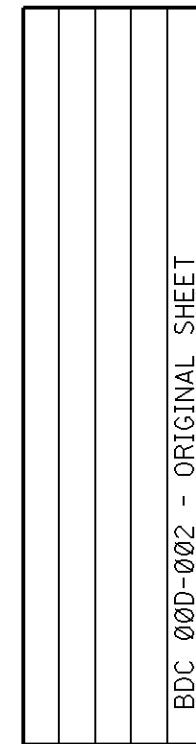
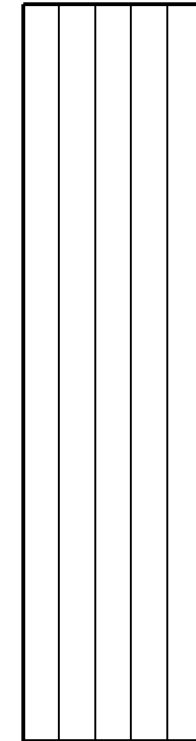
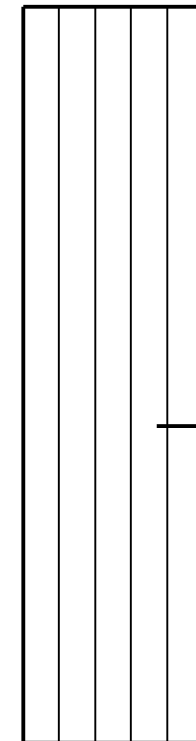
ELECTRICAL DETAILS
N.T.S.

17" X 30" COMPOSITION JUNCTION BOX

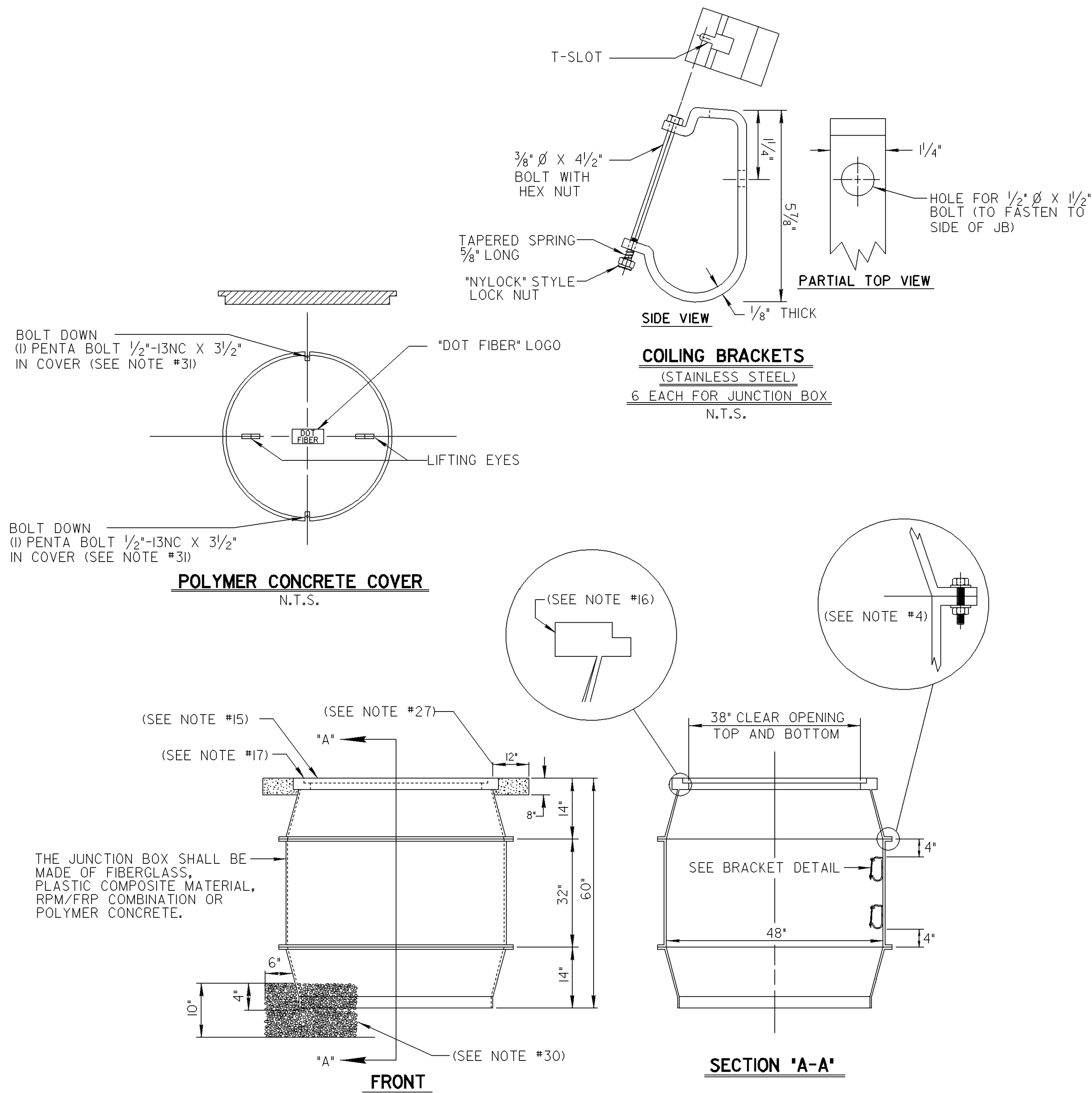
T-380I



REFERENCE



BDC 000-002 - ORIGINAL SHEET



NOTES:

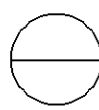
- ALL HARDWARE SHALL BE STAINLESS STEEL.
- THREE PAIRS OF COILING BRACKETS SHALL BE MOUNTED 120° APART IN THE JUNCTION BOX. (AS SHOWN)
- EACH COILING BRACKET SHALL BE FASTENED WITH A 1/2" Ø X 1 1/2" BOLT AND (1) HEX NUT, (2) FLAT WASHERS SHALL BE PROVIDED WITH EACH BOLT.
- JUNCTION BOX SHALL BE FACTORY ASSEMBLED, AND SHALL USE SILICON CAULKING FOR ALL FLANGE JOINTS.
- THE BOX ASSEMBLY SHALL BE DESIGNED FOR A16 LOADING AS SPECIFIED IN ASTM C857 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITIES STRUCTURES." THE MINIMUM ULTIMATE LOAD SHALL BE 45,000 LBS. MINIMUM, TESTED IN ACCORDANCE WITH AASHTO H-20 AND HS-20 LOADING.
- CERTIFICATION BY A LICENSED PROFESSIONAL ENGINEER SHALL BE SUPPLIED WHICH INCLUDES TEST RESULTS THAT JUNCTION BOX AND COVER DESIGN MEET THE SPECIFIED LOADING REQUIREMENT.
- THE COVER SURFACE SHALL BE SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5.
- IDENTIFICATION OF THE COVER SHALL BE PERMANENTLY MOLDED ON THE TOP SURFACE WITH "DOT FIBER".
- THE COLOR OF THE COVER AND THAT PART OF THE BOX THAT IS VISIBLE WHEN IT IS INSTALLED, SHALL BE "CONCRETE GREY".
- DESIGN SHALL BE BASED ON A MINIMUM SAFETY FACTOR OF 2.0 FOR WHEEL LOADS AND 2.0 FOR SOIL LOADS. COVER DEFLECTION AT DESIGN LOADS SHALL NOT EXCEED 0.5 INCHES OF NET COVER DEFLECTION WIDTH AND SIDE WALL DEFLECTION SHALL NOT EXCEED 0.25 INCHES PER FOOT OF COVER WIDTH AND SIDE WALL DEFLECTION SHALL NOT EXCEED 0.25 INCHES PER FOOT OF BOX LENGTH. COMPLIANCE TESTING, SHALL BE PERFORMED ACCORDING TO CURRENT WESTERN UNDERGROUND COMMITTEE GUIDE No. 3.6, NON-CONCRETE ENCLOSURES.
- AT ANY POINT ON THE COVER OR BOX SHALL WITHSTAND A 70 FT. LBS. IMPACT ADMINISTERED WITH A C-TUP ACCORDING TO ASTM D-2444.
- THE MATERIALS UTILIZED IN THE MANUFACTURE OF JUNCTION BOXES AND COVERS SHALL BE RESISTANT TO CHEMICALS COMMONLY FOUND IN THE SOIL OR IN THE OPERATING ENVIRONMENT. THEY MUST ALSO BE RESISTANT TO SUNLIGHT, UV AND ANY CLIMATIC CONDITIONS IN ACCORDANCE WITH ASTM G53. CHEMICAL RESISTANCE PROPERTIES SHALL BE DETERMINED USING ASTM D543 AND ASTM D570 FOR WATER ABSORPTION.
- THE MATERIALS SHALL BE RESISTANT TO FIRE, INCLUDING DIRECT FLAME AND HEAT IN ACCORDANCE WITH ASTM D635.
- THE JUNCTION BOX SHALL BE USABLE, WITHOUT ANY DETRIMENTAL EFFECT IN ANY KIND OF CLIMATE, IN A TEMPERATURE RANGE -40°F TO +149°F. SUDDEN TEMPERATURE CHANGES SHALL NOT AFFECT THE JUNCTION BOX INCLUDING ITS LIFE EXPECTANCY.
- TOP OF THE POLYMER CONCRETE COVER SHALL SET FLUSH WITH THE TOP OF THE JUNCTION BOX.
- A CONCRETE LOCK-IN FEATURE SHALL BE PROVIDED AROUND THE TOP OF THE BOX. ACTUAL DESIGN MAY VARY PER MANUFACTURER.
- THE GAP FROM THE EDGE OF THE COVER TO THE INSIDE EDGE OF THE BOX SHALL BE A MAXIMUM OF 1/8" + 1/16".
- AS AN ALTERNATE, A SINGLE SECTION OR TWO SECTION JUNCTION BOX MAY BE SUPPLIED.
- VIBRATE AND COMPACT SOIL THOROUGHLY AROUND ENTIRE JB UP TO GRADE. (SEE SPECIFICATIONS)
- THE TOP OF THE JUNCTION BOX COVER SHALL BE SET AT GRADE.
- ALL NON-METALLIC CONDUITS SHALL TERMINATE WITH BELL END CONSTRUCTION IN JUNCTION BOX. THE BELL END SHALL BE SET FLUSH WITH THE INSIDE WALL OF THE JUNCTION BOX.
- TERMINAL ENDS OF ALL METALLIC CONDUIT SHALL BE THREADED.
- A NYLON CORD, 125 POUND MIN. TEST STRENGTH, SHALL BE FURNISHED AND INSTALLED IN ALL CONDUITS. (SEE SPECIFICATIONS)
- ALL UNUSED CONDUITS SHALL BE PLUGGED OR CAPPED.
- BONDING AND GROUNDING INSULATED BUSHINGS SHALL BE INSTALLED ON RIGID METALLIC CONDUITS TERMINATING IN JUNCTION BOXES AND/OR FOUNDATIONS AND SHALL HAVE A FITTING TO PREVENT ENTRY OF FOREIGN MATTER PRIOR TO INSTALLATION OF WIRING.
- CONDUITS SHALL ENTER INTO THE JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE ENGINEER. A 2" SEPARATION SHALL BE MAINTAINED BETWEEN ADJACENT WALLS, CONDUITS AND CABLE RACK LOCATIONS.
- A CONCRETE PAD SHALL BE FIELD INSTALLED AROUND THE TOP OF THE JUNCTION BOX AND SHALL BE CLASS "C" CONCRETE.
- ALL CONDUIT ENTRANCES INTO THE JUNCTION BOX SHALL BE FIELD DRILLED WITH A HOLE SAW, OR PUNCHED OUT USING A HYDRAULIC HOLE PUNCH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- ALL CONDUIT OPENINGS SHALL BE SANDED. AFTER THE CONDUITS ARE INSTALLED, ALL CONDUIT ENTRANCES SHALL BE SEALED WITH AN EPOXY OR SILICON CAULK.
- COMPACTED 3/4" GRAVEL OR BROKEN STONE REQUIRED.
- A PROTECTIVE COVER SHALL BE PROVIDED WITH THE BOLT ASSEMBLY.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

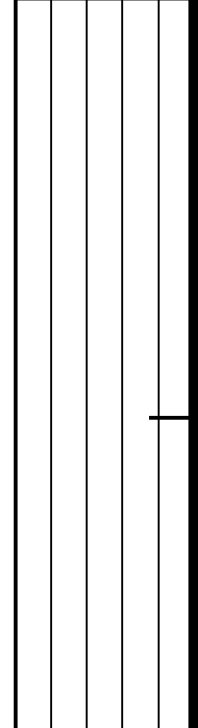
ELECTRICAL DETAILS
N.T.S.

38" JUNCTION BOX

T-390I



REFERENCE



--	--	--	--	--



WARNING TAPE SHALL BE INSTALLED
AFTER FIRST LIFT. (SEE NOTE 7)



WARNING TAPE SHALL BE INSTALLED —
AFTER THE FIRST LIFT. (SEE NOTE 7)
BACKFILL WITH MATERIAL TO THE
BOTTOM OF THE PAVEMENT STRUCTURE
(SEE NOTES 1,3,5&16) —————

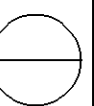
WARNING TAPE SHALL BE INSTALLED AFTER THE FIRST LIFT. (SEE NOTE 7)

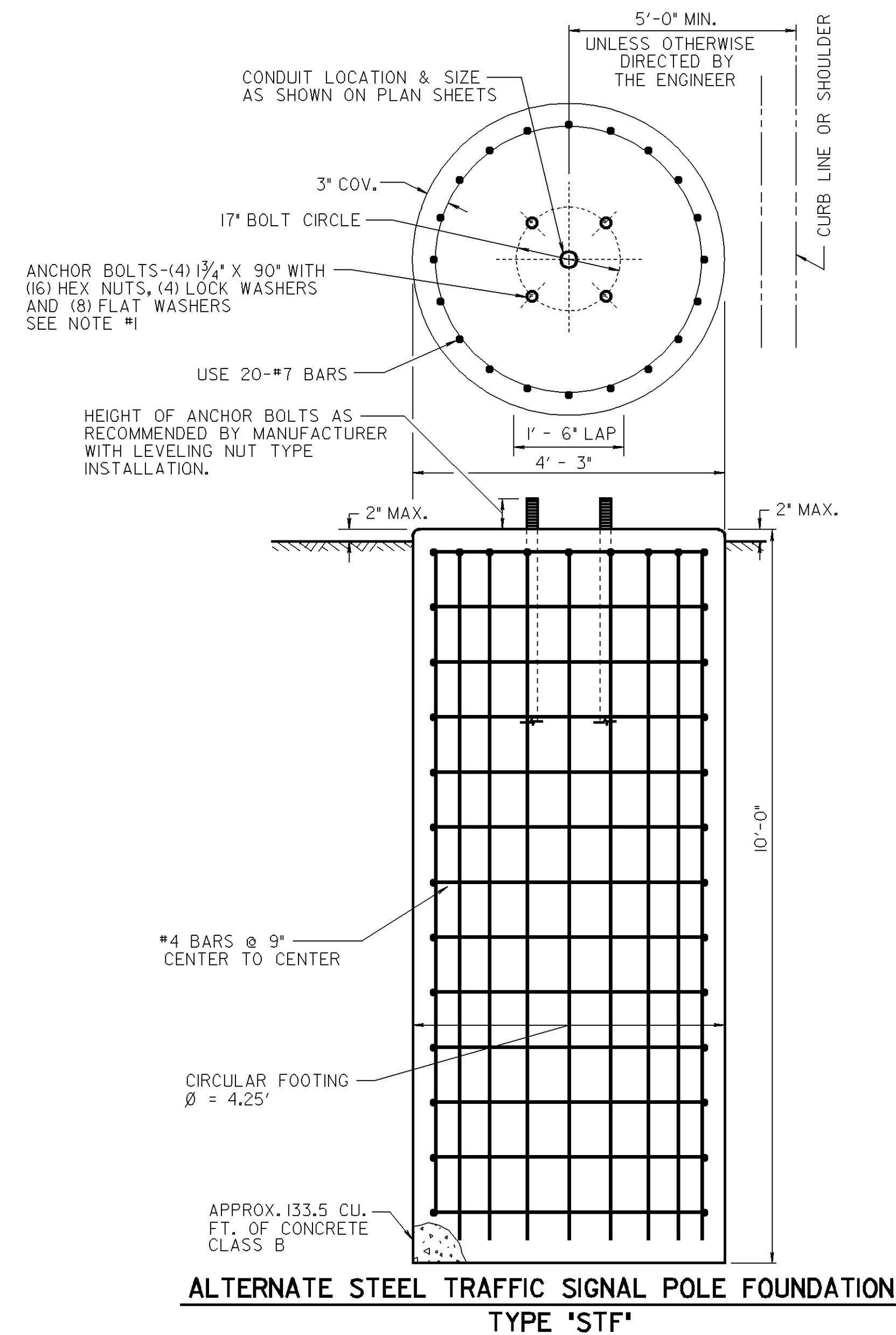
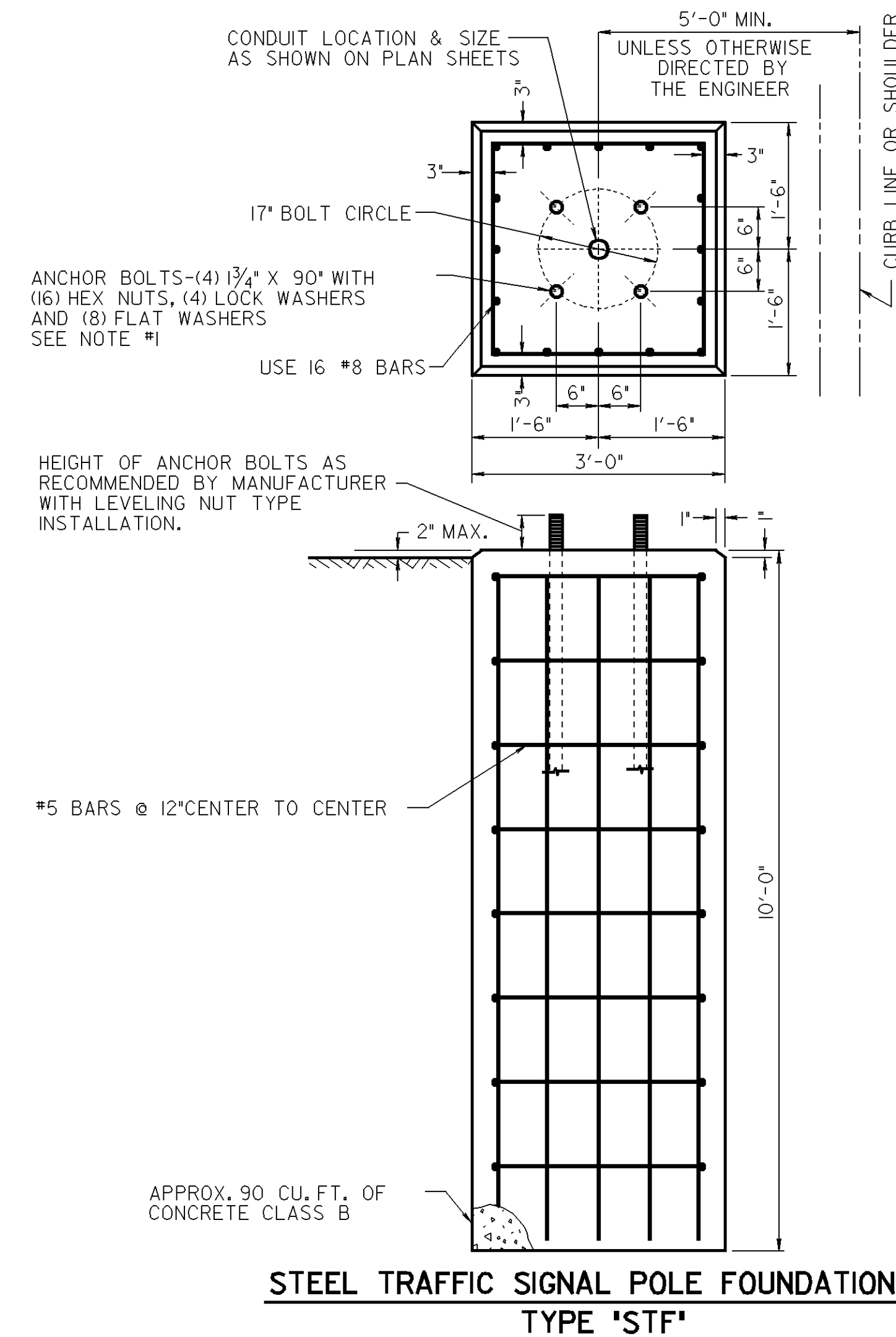


1. BEFORE BACKFILLING TRENCH, REMOVE ALL CUT DEBRIS FROM SITE.
2. THE 2-2" RIGID NON METALLIC CONDUIT SHALL BE CENTERED IN THE TRENCH AND SHALL BE HELD FIRMLY IN PLACE WHILE THE TRENCH IS BACKFILLED.
3. THE BACKFILL MATERIAL SHALL BE COURSE AGGREGATE SIZE No. 8 OR No. 9. THE COURSE AGGREGATE SHALL BE BROKEN STONE OR WASHED GRAVEL.
4. THE BACKFILL MATERIAL SHALL BE MADE IN TWO EQUAL LIFTS. EACH LIFT SHALL BE THOROUGHLY COMPACTED WITH A MODIFIED VIBRATORY PLATE COMPACTOR, (MINIMUM OF THREE PASSES PER LIFT).
5. THE BACKFILL MATERIAL SHALL BE MADE IN ONE LIFT AND SHALL BE THOROUGHLY COMPACTED WITH A MODIFIED VIBRATORY COMPACTOR (MINIMUM OF THREE PASSES PER LIFT).
6. THE BITUMINOUS CONCRETE SURFACE COURSE MIX 1-A SHALL BE MOUND UP ABOVE THE EXISTING PAVEMENT SURFACE AND AFTER THOROUGH COMPACTION, FINISHED GRADE SHALL BE 1/8" ABOVE THE ADJACENT PAVEMENT SURFACE. COMPACTION SHALL BE IN ACCORDANCE WITH SECTION 404 (O TON VIBRATORY ROLLER).
7. WARNING TAPE SHALL BE ORANGE, 4 MIL. FLEXIBLE POLYETHYLENE FILM WHICH SHALL BE RESISTANT TO ACIDS, BASES, HYDROCARBONS AND WATER.
8. THE TRENCH BOTTOM FOR RIGID NONMETALLIC CONDUITS SHALL BE PREPARED TO ELIMINATE LUMPS, RIDGES, JAGGED EDGES AND HOLLOWES UTILIZING BEDDING MATERIAL AS DIRECTED BY THE ENGINEER.
9. AFTER MATERIAL IS BACKFILLED, FERTILIZE, SEED AND MULCH IN ACCORDANCE WITH SECTION 808 OF STANDARD SPECIFICATIONS.
10. WHEN THERE IS A CONCRETE SHOULDER, SAW-CUT, REMOVE THE CONCRETE MATERIAL BACK TO THE CURB AND UTILIZE A TRENCHING MACHINE TO MAKE THE TRENCH. REPLACEMENT MATERIAL SHALL COMPLY WITH NOTE 12.
11. WHEN THERE IS A CONCRETE SHOULDER WITH BITUMINOUS OVERLAY, REPLACE WITH 8" MINIMUM BITUMINOUS MATERIAL OR MATCH EXISTING SECTION. (SEE NOTE 6)
12. QUICK-SETTING CONCRETE, TYPE 1-A, SHALL BE CAPABLE OF SETTING UP TO 2,700 PSI MINIMUM WITHIN THREE HOURS AND 4,500 PSI MINIMUM WITHIN TWENTY EIGHT DAYS. THE THICKNESS OF THE QUICK-SETTING CONCRETE SHALL BE THE SAME AS EXISTING. EXPANSION JOINTS AND DOWELS SHALL BE REPLACED IN KIND AS IN ACCORDANCE WITH STANDARD ROADWAY CONSTRUCTION DETAILS CD-2, CD-4 AND CD-5.
13. ONE #14 AWG CONDUCTOR TYPE THHN/THWN SHALL BE INSTALLED WITH THE FIBER OPTIC CABLE. THE #14 AWG CONDUCTOR SHALL BE 7 WIRE (CLASS B) STRANDING, CONFORMING TO ASTM B3, ASTM B8 AND SHALL BE RATED FOR 600 VOLTS.
14. THE RIGID NON-METALLIC CONDUIT SHALL BE PVC, SCHEDULE 80.
15. THE BACKFILL MATERIAL SHALL BE MADE IN LIFTS. THE FIRST LIFT SHALL BE A MAXIMUM OF 38" AND ALL OTHER LIFTS SHALL BE A MAXIMUM OF 12". EACH LIFT SHALL BE THOROUGHLY COMPACTED. A MINIMUM OF TWO PASSES FOR EACH LIFT WITH A VIBRATORY COMPACTOR, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE VIBRATORY COMPACTOR SHALL HAVE A RATED IMPACT FORCE OF 8000 - 16,000 POUNDS THAT IS OPERATED AT 1600 RPM AND SHALL BE CAPABLE OF OPERATING WITHIN A TRENCH DEPTH OF 0 - 26".
16. THE VIBRATORY PLATE COMPACTOR SHALL HAVE A RATED IMPACT FORCE OF APPROXIMATELY 5,000 POUNDS THAT IS OPERATED AT 5,000 CYCLES PER MINUTE WITH A MODIFIED FOOT. THE MODIFIED FOOT SHALL BE ABLE TO FIT IN A 24" DEEP TRENCH AND THE BASE PLATE SHALL BE 4" WIDE. THE VIBRATORY PLATE COMPACTOR WITH THE MODIFIED FOOT SHALL BE DESIGNED TO BE PULLED BY A VEHICLE.

WARNING TAPE
(BLACK LETTERS ON ORANGE BACKGROUND)

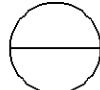
T-420I



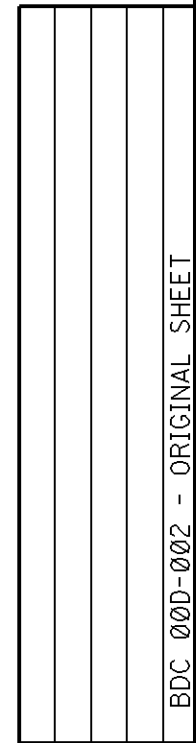
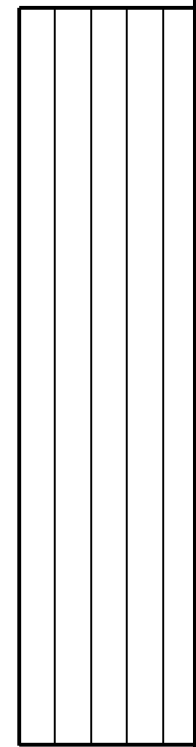
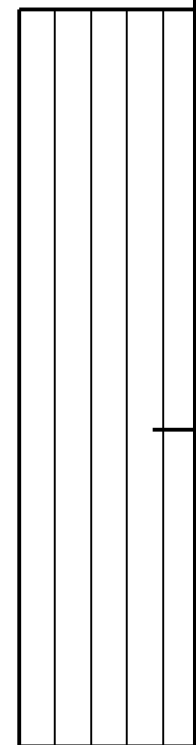


NOTE:

- I. ANCHOR BOLTS SHALL BE HOT DIPPED GALVANIZED STEEL ASTM F1554 GRADE 55.

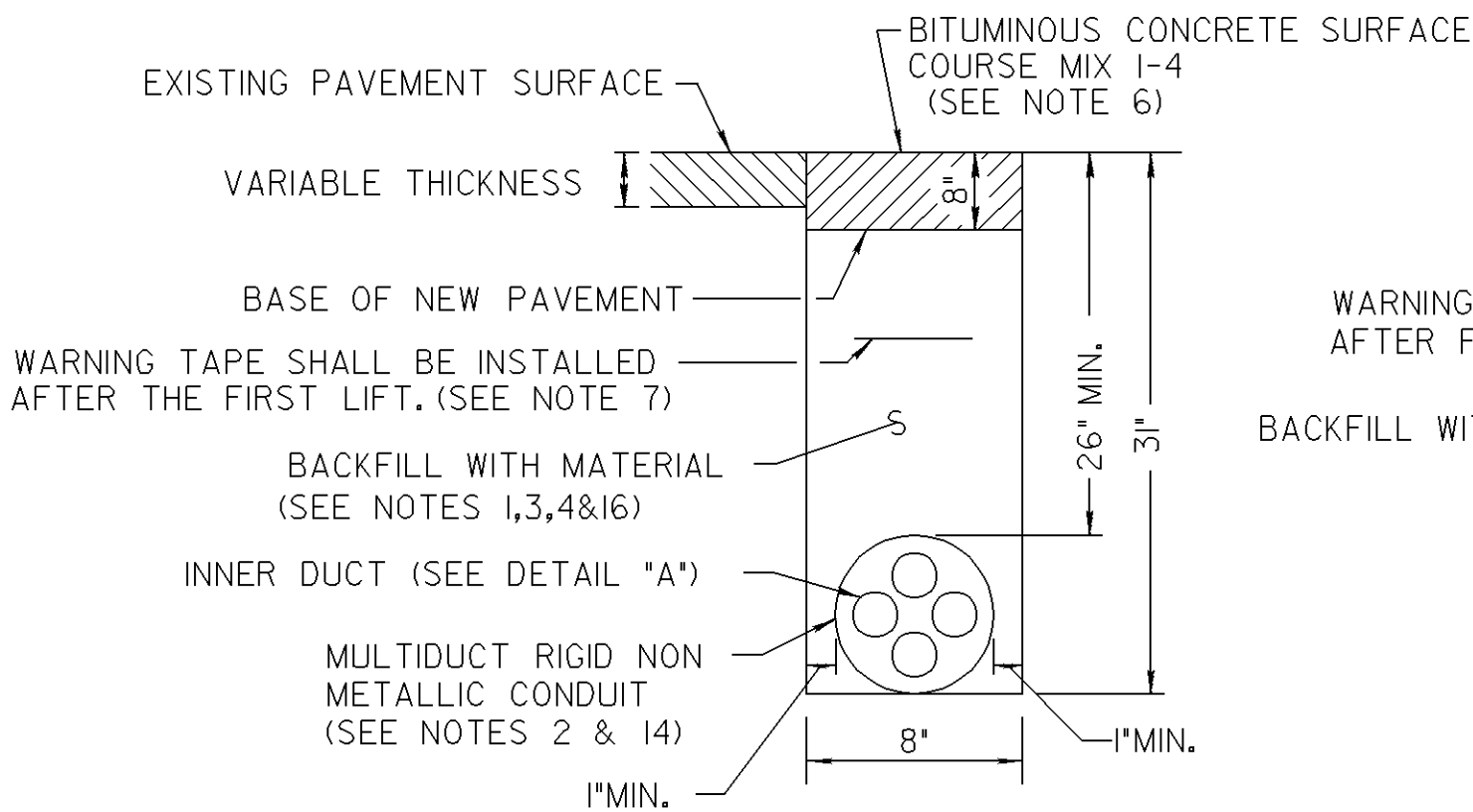
NEW JERSEY DEPARTMENT OF TRANSPORTATION	
ELECTRICAL DETAILS N.T.S.	
STEEL TRAFFIC SIGNAL POLE FOUNDATION DETAILS	
	T-430I 

REFERENCE

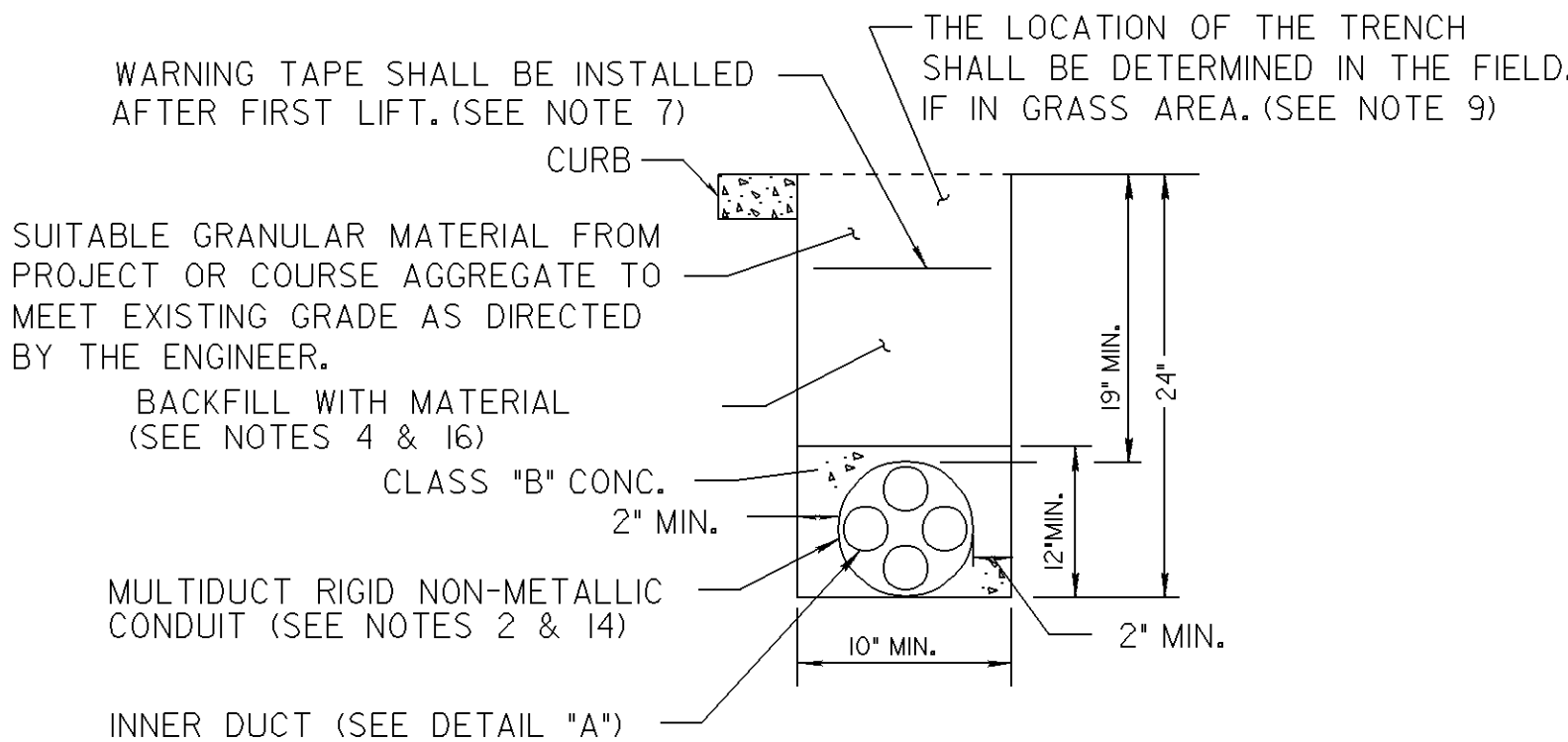


BDC 000-002 - ORIGINAL SHEET

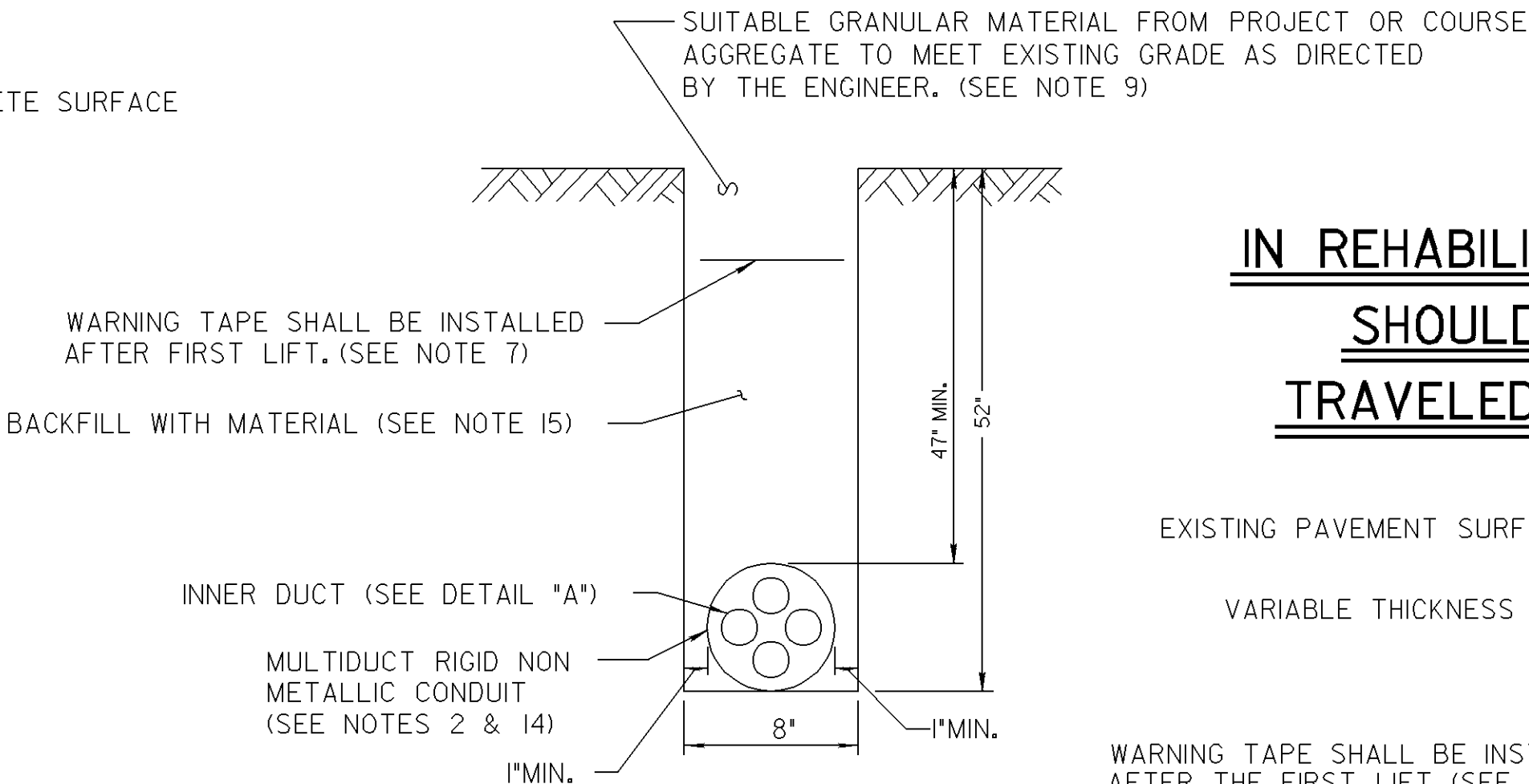
**IN BITUMINOUS SHOULDER, TRAVELED
WAY OR RAMP AREA, TYPE MBS**



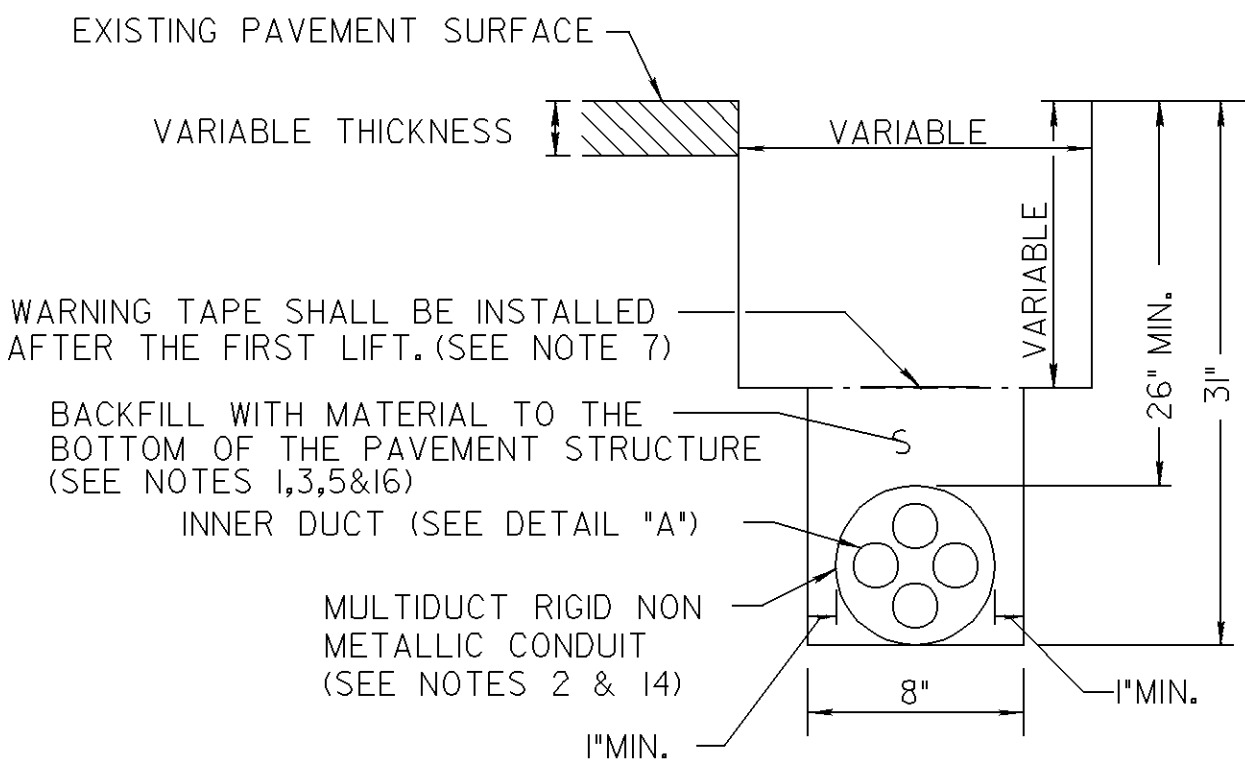
**BEHIND THE CURB IN
LANDSERVICE AREA, TYPE MBC**



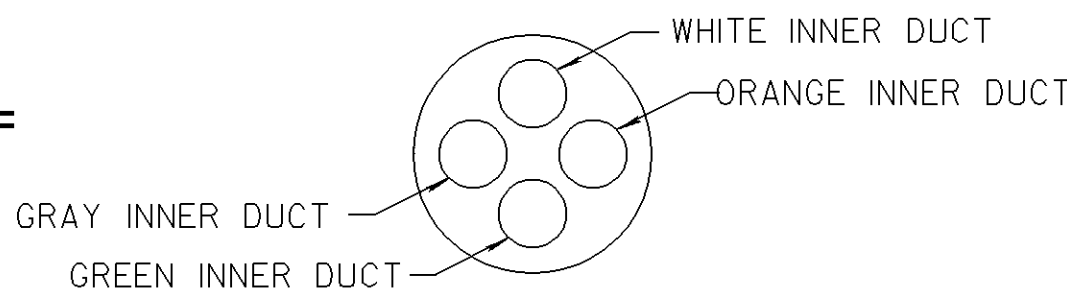
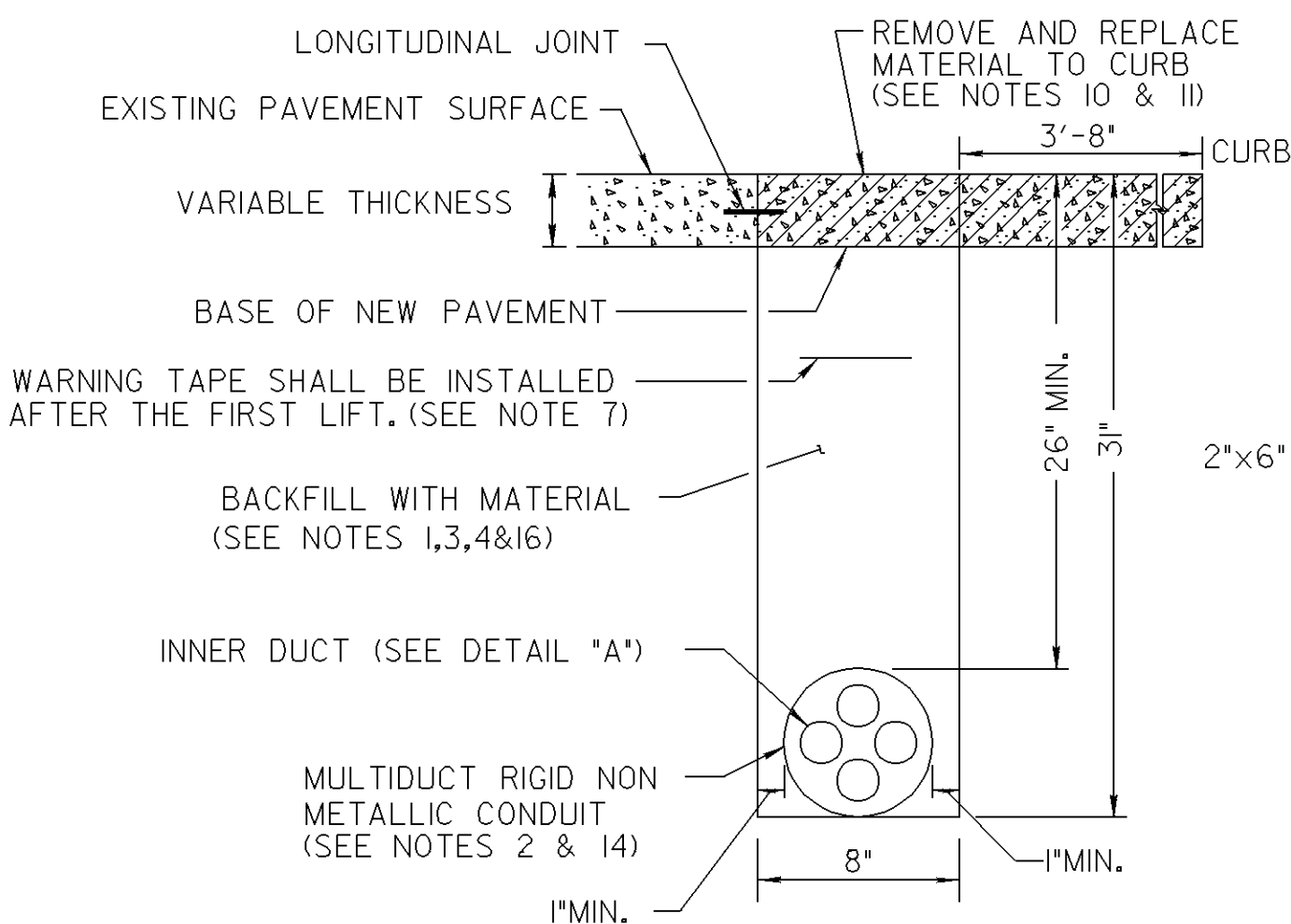
IN GRASS AREAS, TYPE MGA



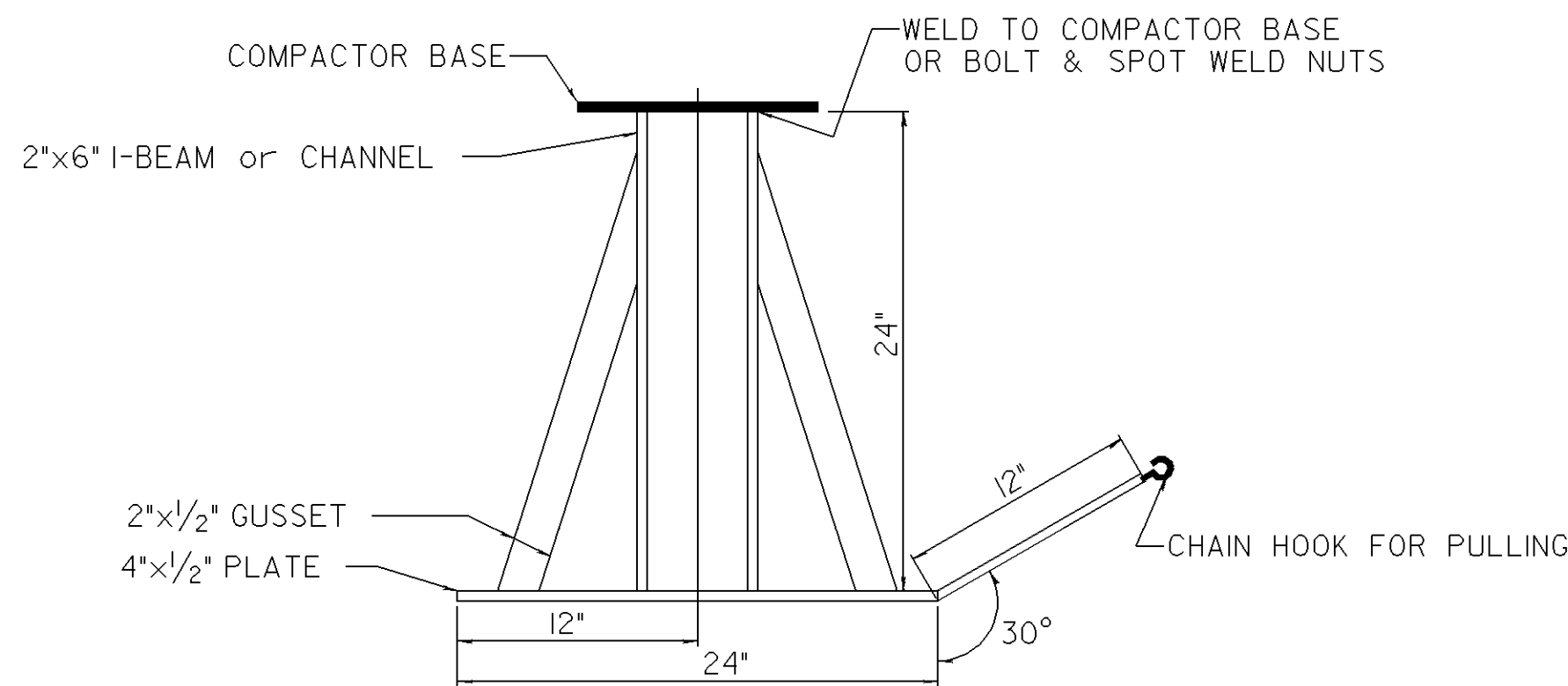
**IN REHABILITATED/RECONSTRUCTED CONCRETE
SHOULDER OR BITUMINOUS SHOULDER,
TRAVELED WAY OR RAMP AREA, TYPE MCB**



IN CONCRETE SHOULDER, TYPE MCS



DETAIL "A"



MODIFIED FOOT

(SEE NOTE 16)

NOTES:

1. BEFORE BACKFILLING TRENCH, REMOVE ALL CUT DEBRIS FROM SITE.
2. THE RIGID NON METALLIC MULTIDUCT CONDUIT (SEE PLANS FOR SIZE) SHALL BE CENTERED IN THE TRENCH AND SHALL BE HELD FIRMLY IN PLACE WHILE THE TRENCH IS BACKFILLED.
3. THE BACKFILL MATERIAL SHALL BE COURSE AGGREGATE SIZE No. 8 OR No. 9. THE COURSE AGGREGATE SHALL BE BROKEN STONE OR WASHED GRAVEL.
4. THE BACKFILL MATERIAL SHALL BE MADE IN TWO EQUAL LIFTS. EACH LIFT SHALL BE THOROUGHLY COMPACTED WITH A MODIFIED VIBRATORY PLATE COMPACTOR, (MINIMUM OF THREE PASSES PER LIFT).
5. THE BACKFILL MATERIAL SHALL BE MADE IN ONE LIFT AND SHALL BE THOROUGHLY COMPACTED WITH A MODIFIED VIBRATORY COMPACTOR (MINIMUM OF THREE PASSES PER LIFT).
6. THE BITUMINOUS CONCRETE SURFACE COURSE MIX 1-4 SHALL BE MOUND UP ABOVE THE EXISTING PAVEMENT SURFACE AND AFTER THOROUGH COMPACTION, FINISHED GRADE SHALL BE 1/8" ABOVE THE ADJACENT PAVEMENT SURFACE. COMPACTION SHALL BE IN ACCORDANCE WITH SECTION 404 (10 TON VIBRATORY ROLLER).
7. WARNING TAPE SHALL BE ORANGE, 4 MIL. FLEXIBLE POLYETHYLENE FILM WHICH SHALL BE RESISTANT TO ACIDS, BASES, HYDROCARBONS AND WATER.
8. THE TRENCH BOTTOM FOR RIGID NONMETALLIC CONDUITS SHALL BE PREPARED TO ELIMINATE LUMPS, RIDGES, JAGGED EDGES AND HOLLOWs UTILIZING BEDDING MATERIAL AS DIRECTED BY THE ENGINEER.
9. AFTER MATERIAL IS BACKFILLED, FERTILIZE, SEED AND MULCH IN ACCORDANCE WITH SECTION 808 OF STANDARD SPECIFICATIONS.
10. WHEN THERE IS A CONCRETE SHOULDER, SAW-CUT, REMOVE THE CONCRETE MATERIAL BACK TO THE CURB AND UTILIZE A TRENCHING MACHINE TO MAKE THE TRENCH. REPLACEMENT MATERIAL SHALL COMPLY WITH NOTE 12.
11. WHEN THERE IS A CONCRETE SHOULDER WITH BITUMINOUS OVERLAY, REPLACE WITH 8" MINIMUM BITUMINOUS MATERIAL OR MATCH EXISTING SECTION. (SEE NOTE 6)
12. QUICK-SETTING CONCRETE, TYPE 1-A, SHALL BE CAPABLE OF SETTING UP TO 2,700 PSIMUMINUM WITHIN THREE HOURS AND 4,500 PSIMUMINUM WITHIN TWENTY EIGHT DAYS. THE THICKNESS OF THE QUICK-SETTING CONCRETE SHALL BE THE SAME AS EXISTING. EXPANSION JOINTS AND DOWELS SHALL BE REPLACED IN KIND AS IN ACCORDANCE WITH STANDARD ROADWAY CONSTRUCTION DETAILS CD-2, CD-4 AND CD-5. LONGITUDINAL JOINT TIES SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION DETAIL CD-4.4.
13. ONE #14 AWG CONDUCTOR TYPE THHN/THWN SHALL BE INSTALLED WITH THE FIBER OPTIC CABLE. THE #14 AWG CONDUCTOR SHALL BE 7 WIRE (CLASS B) STRANDING, CONFORMING TO ASTM B3, ASTM B8 AND SHALL BE RATED FOR 600 VOLTS.
14. THE OUTER DUCT FOR THE MULTIDUCT SHALL BE PVC, SCHEDULE 80 TYPE.
15. THE BACKFILL MATERIAL SHALL BE MADE IN LIFTS. THE FIRST LIFT SHALL BE A MAXIMUM OF 38" AND ALL OTHER LIFTS SHALL BE A MAXIMUM OF 12". EACH LIFT SHALL BE THOROUGHLY COMPACTED, A MINIMUM OF TWO PASSES FOR EACH LIFT WITH A VIBRATORY COMPACTOR, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE VIBRATORY COMPACTOR SHALL HAVE A RATED IMPACT FORCE OF 8000 - 16,000 POUNDS THAT IS OPERATED AT 1600 RPM AND SHALL BE CAPABLE OF OPERATING WITHIN A TRENCH DEPTH OF 0 - 26".
16. THE VIBRATORY PLATE COMPACTOR SHALL HAVE A RATED IMPACT FORCE OF APPROXIMATELY 5,000 POUNDS THAT IS OPERATED AT 5,000 CYCLES PER MINUTE WITH A MODIFIED FOOT. THE MODIFIED FOOT SHALL BE ABLE TO FIT IN A 24" DEEP TRENCH AND THE BASE PLATE SHALL BE 4" WIDE. THE VIBRATORY PLATE COMPACTOR WITH THE MODIFIED FOOT SHALL BE DESIGNED TO BE PULLED BY A VEHICLE.

CAUTION CAUTION CAUTION
BURIED FIBER OPTIC CABLE BELOW

WARNING TAPE

(BLACK LETTERS ON ORANGE BACKGROUND)

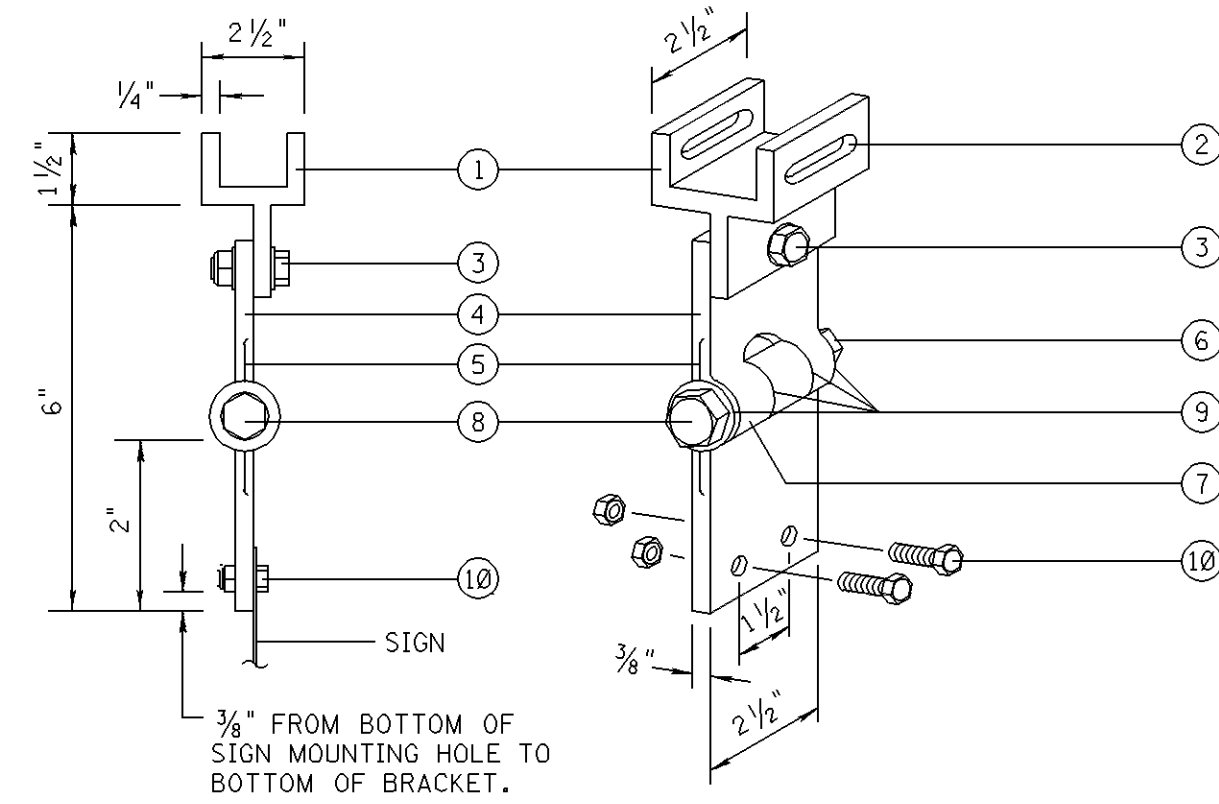
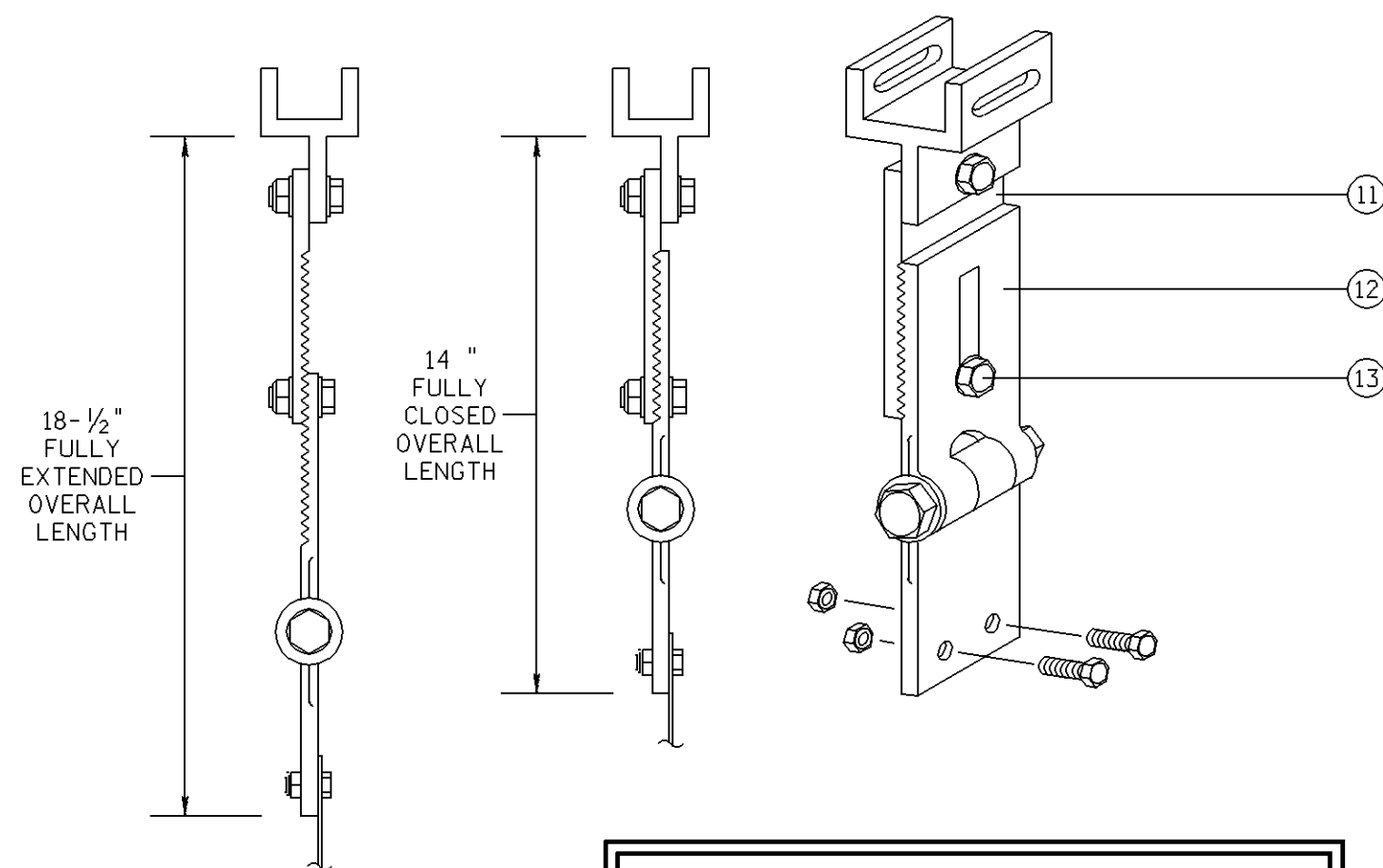
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

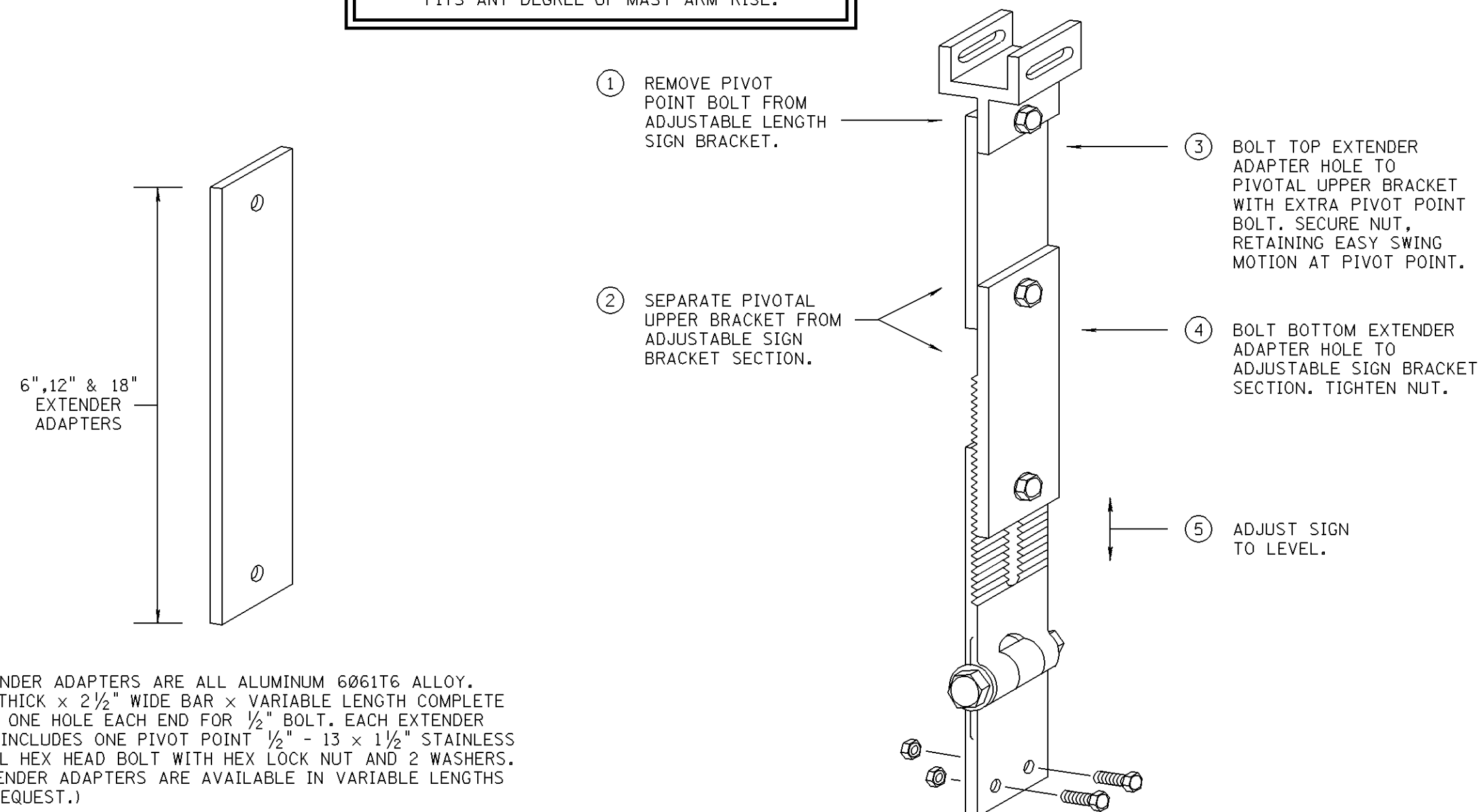
**RIGID NON-METALLIC MULTIDUCT CONDUIT
INSTALLATION FOR FIBER OPTICS**

T-440I



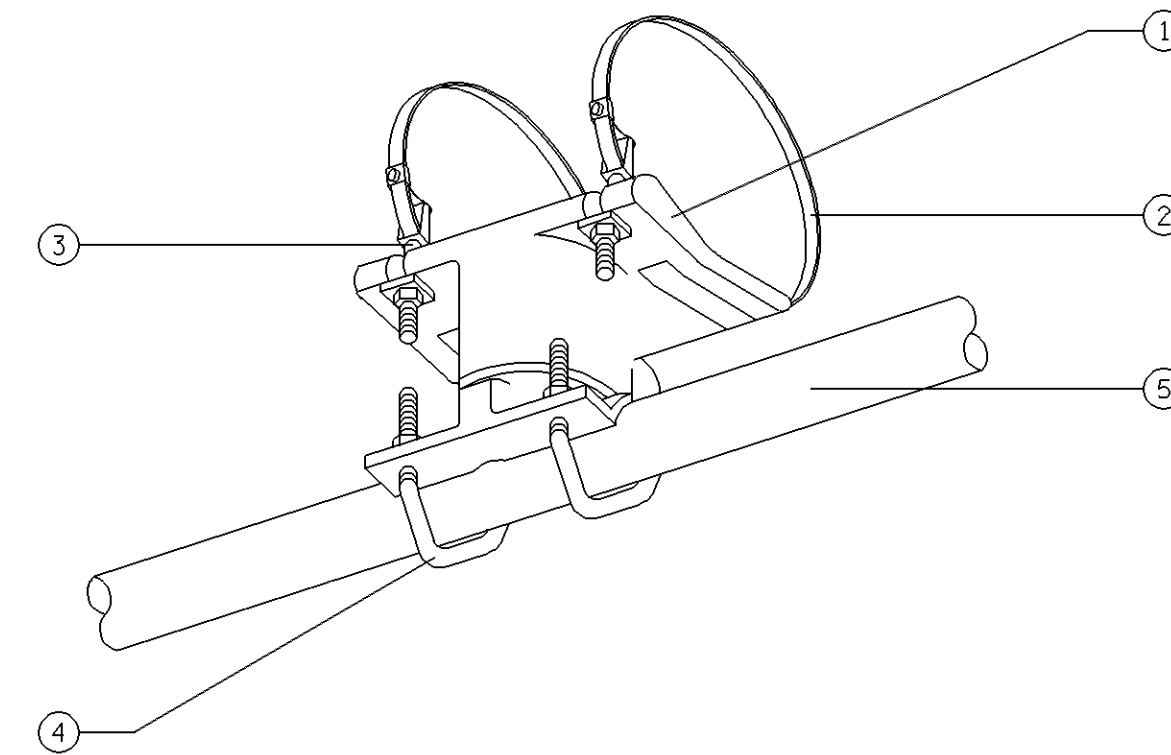
FIXED LENGTH NON-ADJUSTABLE
SWING SIGN BRACKETADJUSTABLE LENGTH
SWING SIGN BRACKET

EXTENDER ADAPTERS

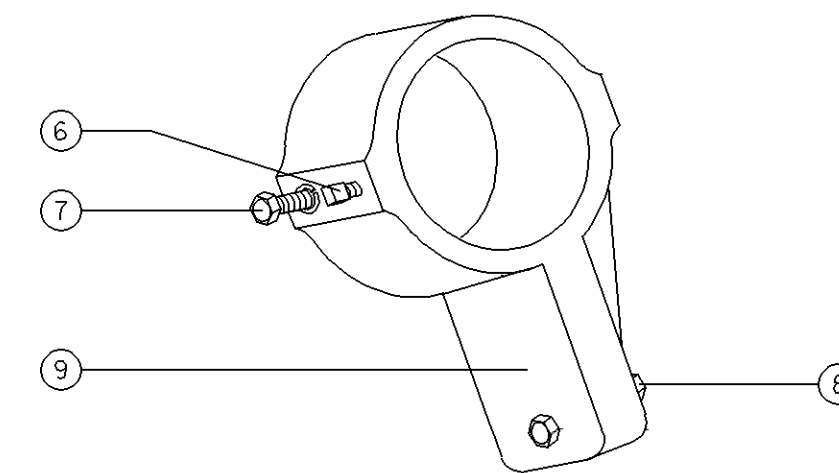
FOR ADJUSTABLE LENGTH SWING SIGN BRACKET.
EXTENDS BRACKET TO LEVEL SIGN.
FITS ANY DEGREE OF MAST ARM RISE.EXTENDER ADAPTERS ARE ALL ALUMINUM 6061T6 ALLOY.
3/8" THICK X 2 1/2" WIDE BAR X VARIABLE LENGTH COMPLETE
WITH ONE HOLE EACH END FOR 1/2" BOLT. EACH EXTENDER
BAR INCLUDES ONE PIVOT POINT 1/2" - 13 X 1 1/2" STAINLESS
STEEL HEX HEAD BOLT WITH HEX LOCK NUT AND 2 WASHERS.
(EXTENDER ADAPTERS ARE AVAILABLE IN VARIABLE LENGTHS
ON REQUEST.)

- ① PIVOTAL UPPER BRACKET.
- ② 1 5/8" x 1/4" SLOT FOR DOUBLE STRAPPING TO MAST ARM. (M2G-34S(HD) .030 x 3/4" HEAVY DUTY STAINLESS STEEL STRAP WITH M2G-34B(HD) BUCKLE RECOMMENDED.)
- ③ 1/2" - 13 x 1 1/2" STAINLESS STEEL HEX HEAD BOLT WITH STAINLESS STEEL HEX LOCK NUT AND 1/16" STAINLESS STEEL WASHER (BOTH SIDES). ALLOWS UPPER BRACKET TO PIVOT AND ALIGN WITH MAST ARM.
- ④ 6" OVERALL DROP WITH FIXED LENGTH SIGN BRACKET.
- ⑤ STAINLESS STEEL DAMPENER SPRING (REMOVABLE).
- ⑥ STAINLESS STEEL HEX LOCK NUT WITH 1/16" STAINLESS STEEL WASHER.
- ⑦ 1" O.D. AXLE HOUSING.
- ⑧ 1/2" - 13 x 4" STAINLESS STEEL HEX HEAD BOLT WITH 1/16" STAINLESS WASHER.
- ⑨ OILITE BUSHING.
- ⑩ SIGN MOUNTING SETS, CONSISTING OF TWO EACH 3/16" - 18 x 1" STAINLESS STEEL HEX HEAD BOLT WITH STAINLESS STEEL HEX LOCK NUT. TWO HOLES ON 1 1/2" CENTERS PROVIDE POSITIVE LOCK SIGN MOUNTING TO BRACKET.

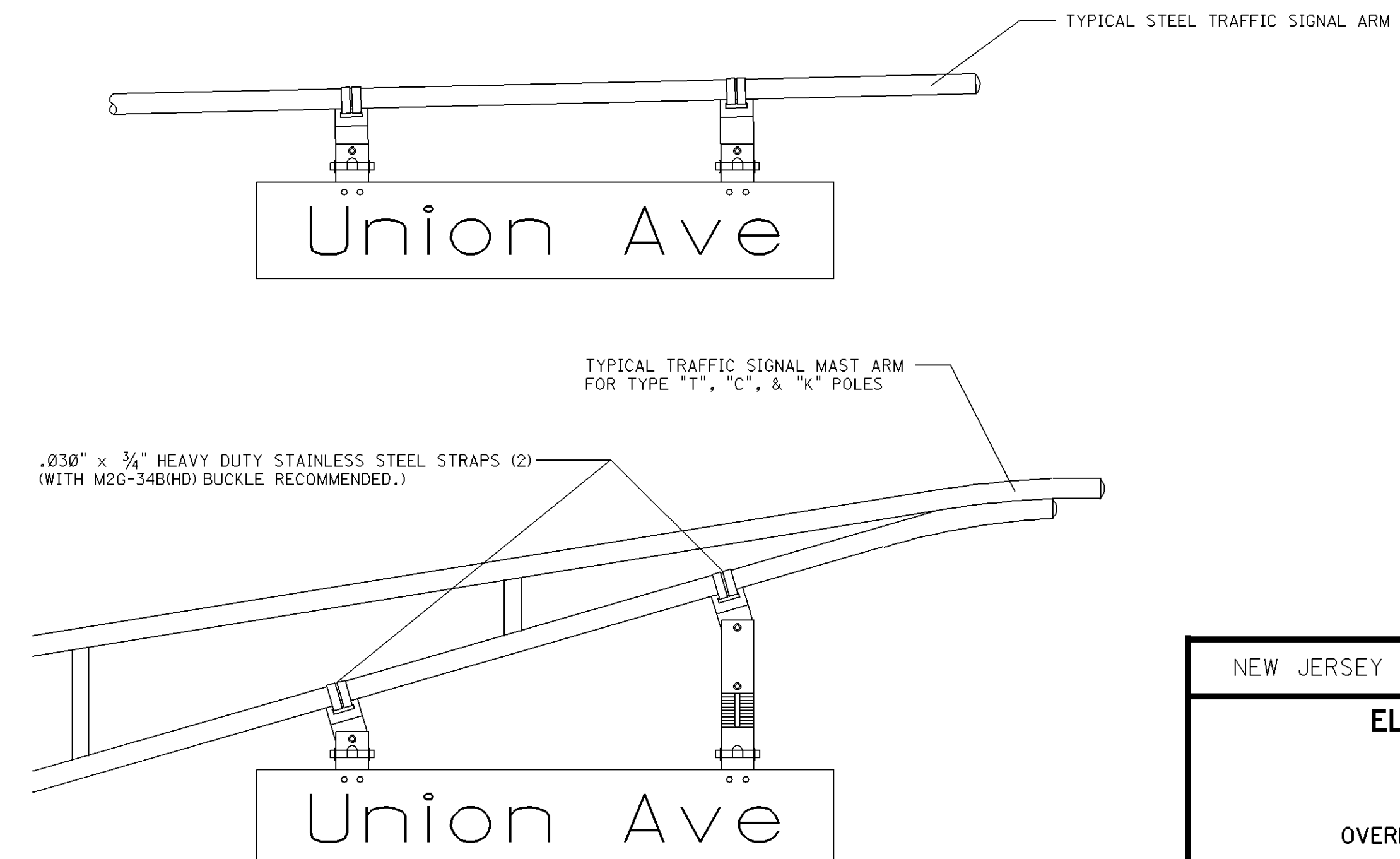
- ⑪ 8 1/4" OVERALL LENGTH UPPER ADJUSTABLE SIGN BRACKET SECTION.
- ⑫ 9" OVERALL LENGTH LOWER ADJUSTABLE SIGN BRACKET SECTION, INCLUDING AXLE HOUSING (8" OVERALL LENGTH TO TOP OF AXLE HOUSING).
- ⑬ 1/2" - 13 x 1 1/2" STAINLESS STEEL HEX BOLT WITH STAINLESS STEEL HEX LOCK NUT AND 1/16" STAINLESS STEEL WASHERS (BOTH SIDES). LOOSEN LOCK NUT, ADJUST BRACKET TEETH TO LEVEL SIGN.

MAST ARM
ASSEMBLY BRACKET

SLIDER CLAMP



- ① CLAMP SHALL BE ALUMINUM ALLOY (356-T6)
- ② 5/8" STAINLESS STEEL STRAP (2) WITH 5/8" BANDCLAMP.
- ③ STAINLESS STEEL CLAMP SCREW WITH BEARING WASHER, 1/16" FLATWASHER & 1/16" - 14 HEX NUT. CLAMP SCREW SHALL BE INSTALLED WITH MAINTAINING A MINIMUM OF 1/4" CLEARANCE TO THE MAST ARM CLAMP.
- ④ 5/16" - 18 x 1 3/4" x 2 5/8" x 7/8" U-BOLT WITH 5/16" SPLIT LOCKWASHER & 3/16" - 18 HEX NUT.
- ⑤ 1 1/2" ALUMINUM TUBE
- ⑥ 3/8" SQUARE HEAD SET SCREW
- ⑦ 5/16" x 1 1/2" HEX BOLT WITH LOCKWASHER
- ⑧ 3/8" x 1 1/2" STAINLESS STEEL HEX HEAD BOLT WITH STAINLESS STEEL HEX LOCK NUT AND 1/16" STAINLESS STEEL WASHER (BOTH SIDES). A BRONZE REDUCER BUSHING (1/2" TO 3/8") SHALL BE USED INSIDE THE SLIDER CLAMP.
- ⑨ CAST ALUMINUM SLIDER CLAMP

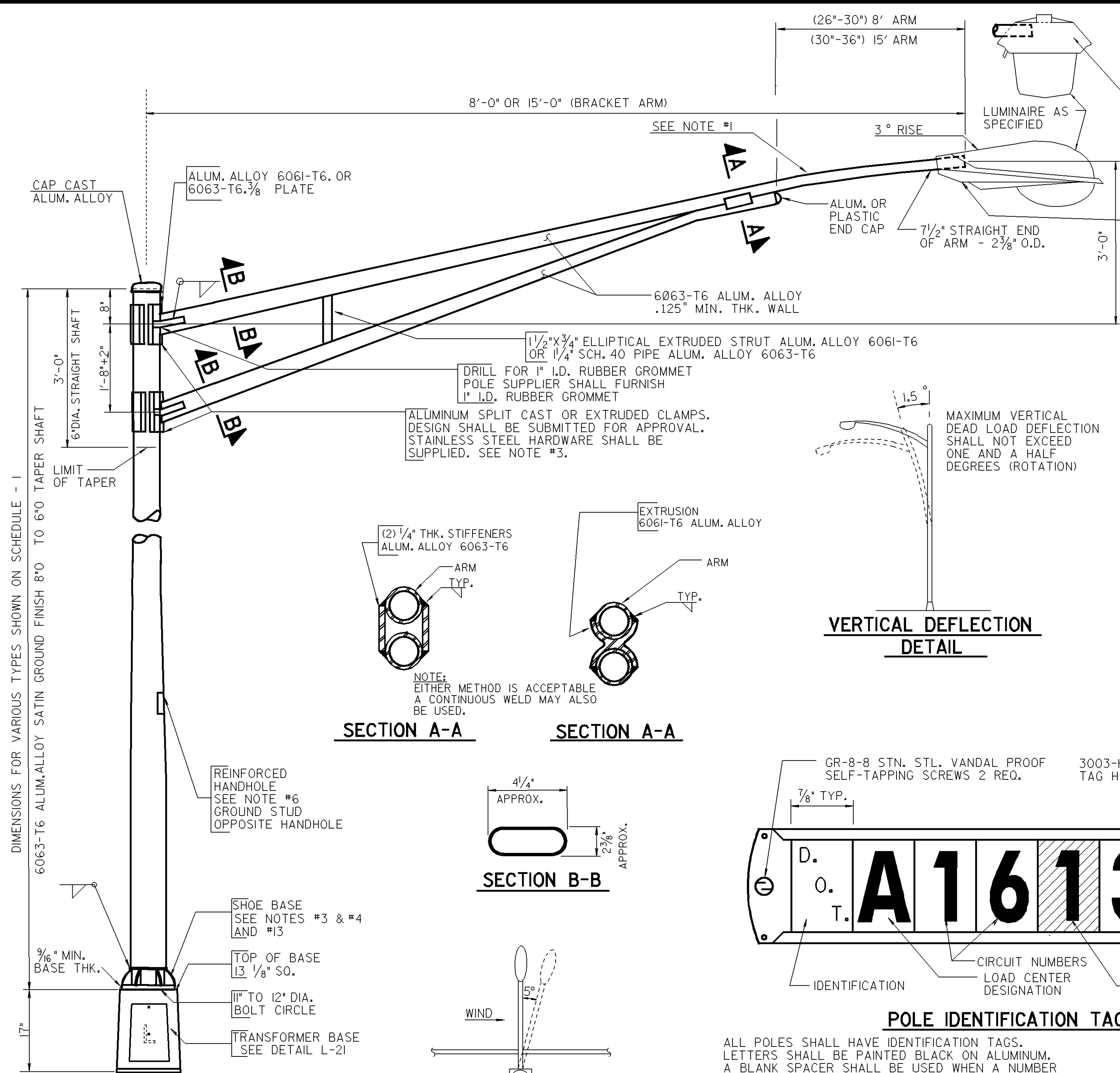
NOTE:
INSTALLATION OF SLIDER:
DRILL 3/8" HOLE THRU ONE WALL OF PIPE.
TIGHTEN 3/8" x 1 1/2" HEX BOLT WITH
LOCKWASHER INTO SLIDER THRU HOLE IN
PIPE. ATTACH 3/8" SQUARE HEAD SET SCREW.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

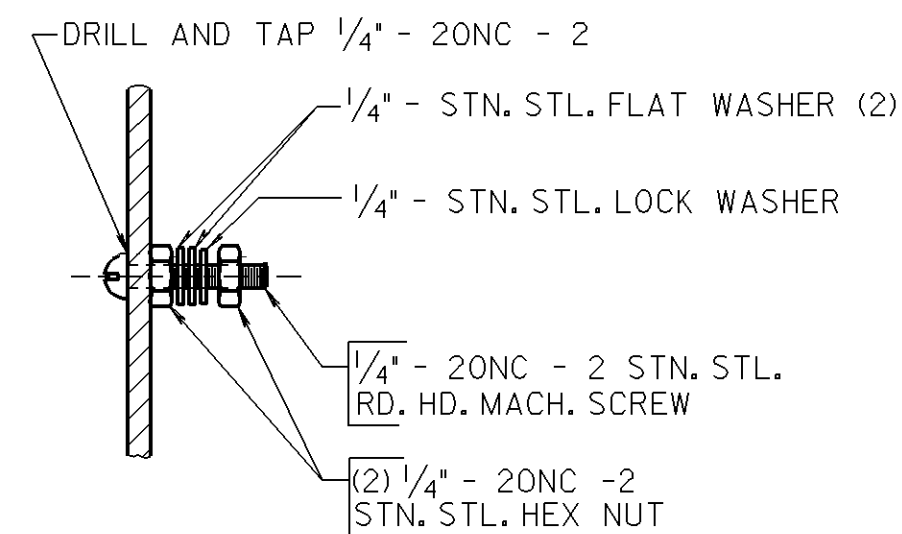
N.T.S.

OVERHEAD MAST ARM ADJUSTABLE
SWING SIGN BRACKETS



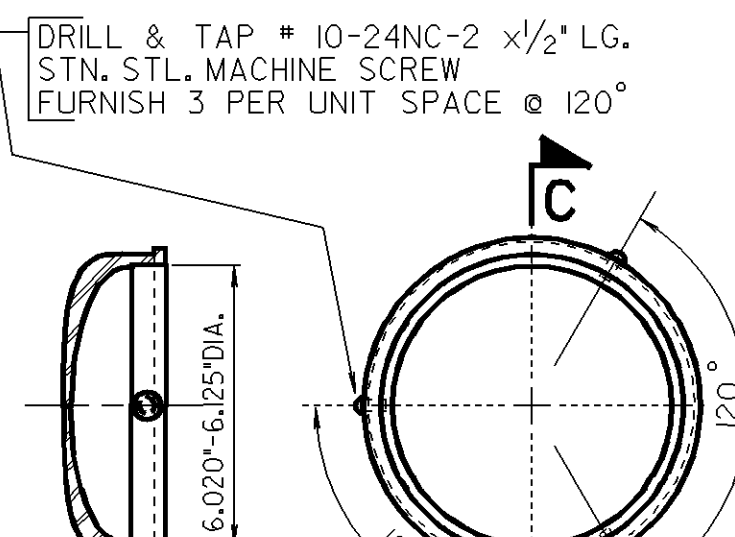
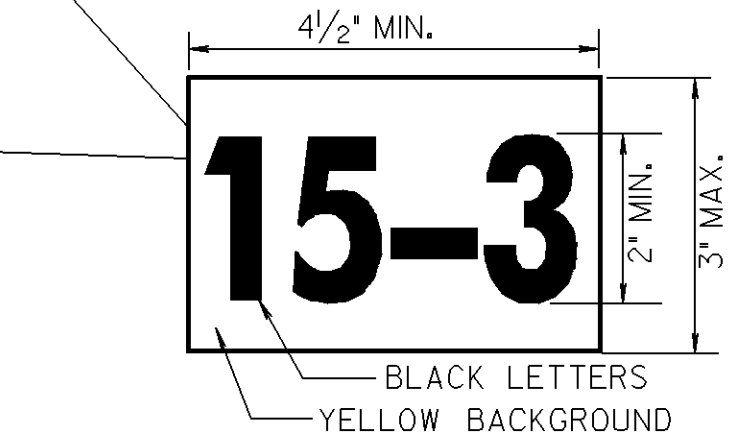
LEGEND		
WATTAGE	TYPE II MEDIUM/SEMI CUTOFF	TYPE III MEDIUM/SEMI CUTOFF
150	15 - 2	15 - 3
250	25 - 2	25 - 3
400	40 - 2	40 - 3

HIGH PRESSURE SODIUM SHALL BE A YELLOW BACKGROUND WITH BLACK LETTERS FOR THE WATTAGE AND TYPE REQUIRED.



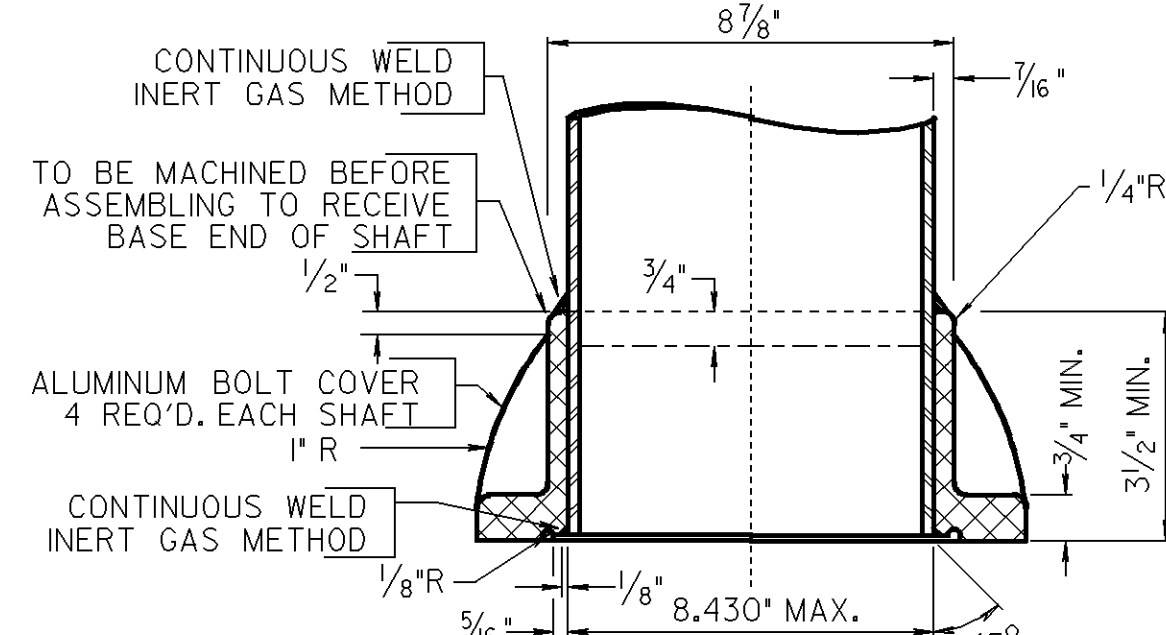
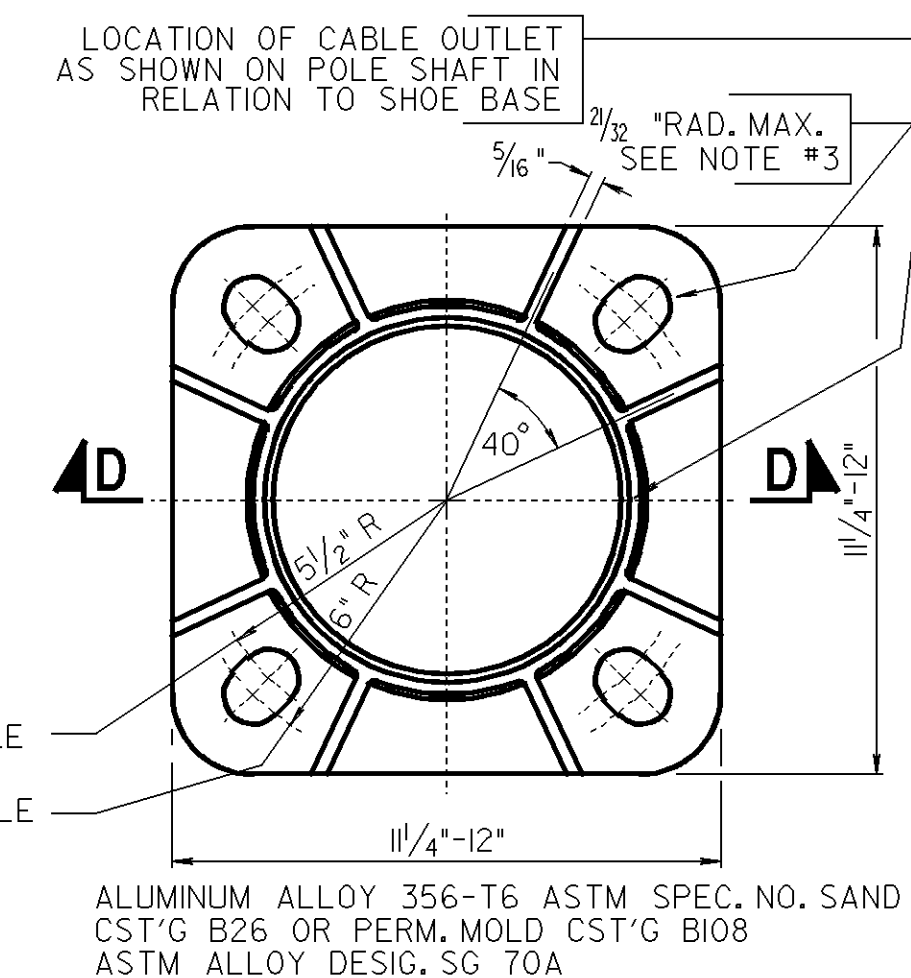
DETAIL 'A'

GROUND STUD DETAIL
OPPOSITE HANDHOLE



SECTION C-C
CAST ALUMINUM ALLOY

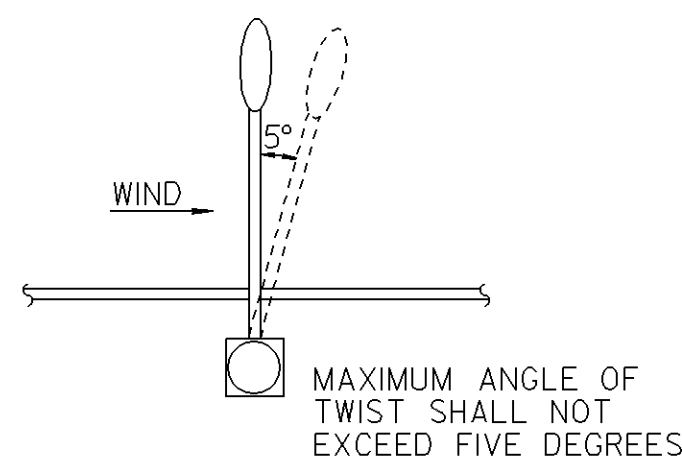
CAST ALUMINUM CAP



SECTION D-D
ALUMINUM SHOE BASE

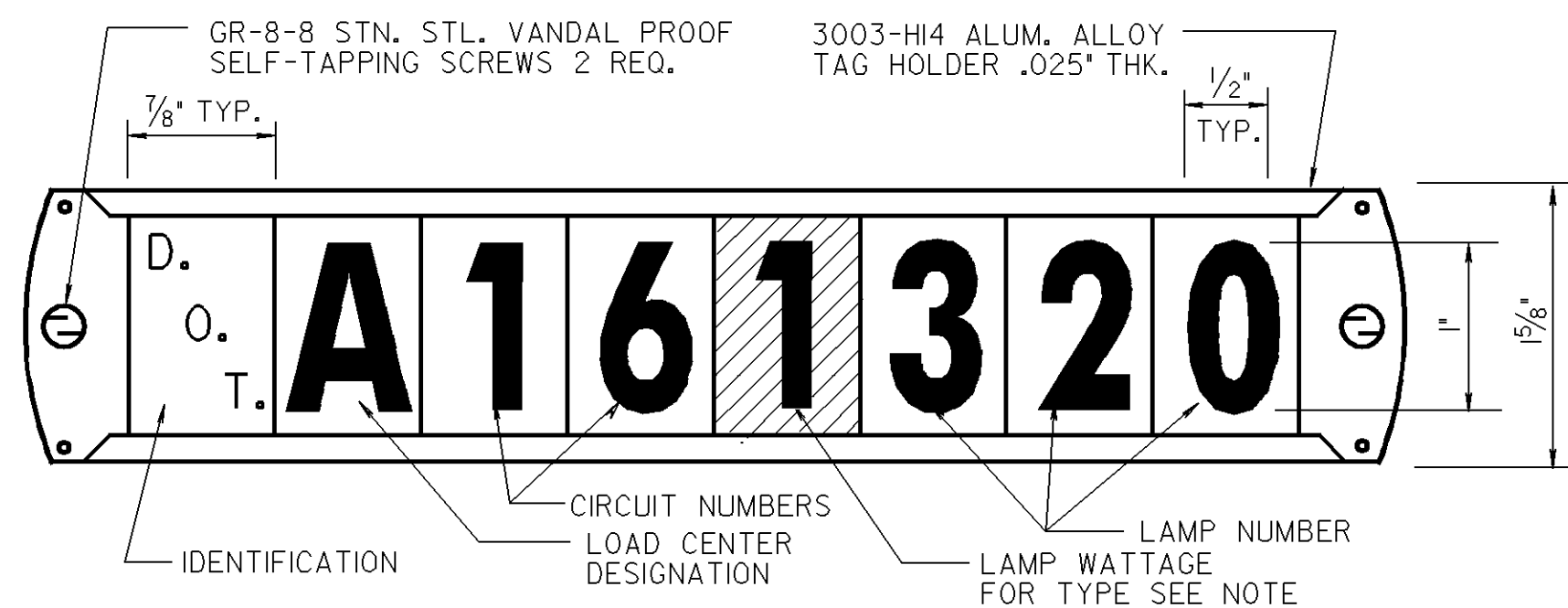
SCHEDULE I

N.J. LIGHTING STANDARDS				MAX. LUMINAIRE SIZE		
TYPES		SHAFT DIMENSIONS			WEIGHT	PROJ. AREA SQ.FT.
		TAPER	MIN. WALL THICKNESS	LENGTH		
L-8-S	L-8	8"x6"	.188"	22'	75#	3.2
L-8-S-SB	L-8-SB	8"x6"	.188"	22'	75#	3.2
L-8-S-T	L-8-T	8"x6"	.188"	22'	75#	3.2
L-8-S-40	L-8-40	8"x6"	.250"	37'	75#	3.2
L-8-S-40SB	L-8-40SB	8"x6"	.250"	37'	75#	3.2
L-8-S-40T	L-8-40T	8"x6"	.250"	37'	75#	3.2
L-15-S	L-15	8"x6"	.188"	22'	75#	3.2
L-15-S-SB	L-15-SB	8"x6"	.188"	22'	75#	3.2
L-15-S-T	L-15-T	8"x6"	.250"	22'	75#	3.2
L-15-S-40	L-15-40	8"x6"	.250"	37'	74#	3.2
L-15-S-40SB	L-15-40SB	8"x6"	.250"	37'	74#	3.2
L-8-SV		8"x6"	.188"	22'	75#	3.2
L-15-SV		8"x6"	.188"	22'	75#	3.2



ANGLE OF TWIST

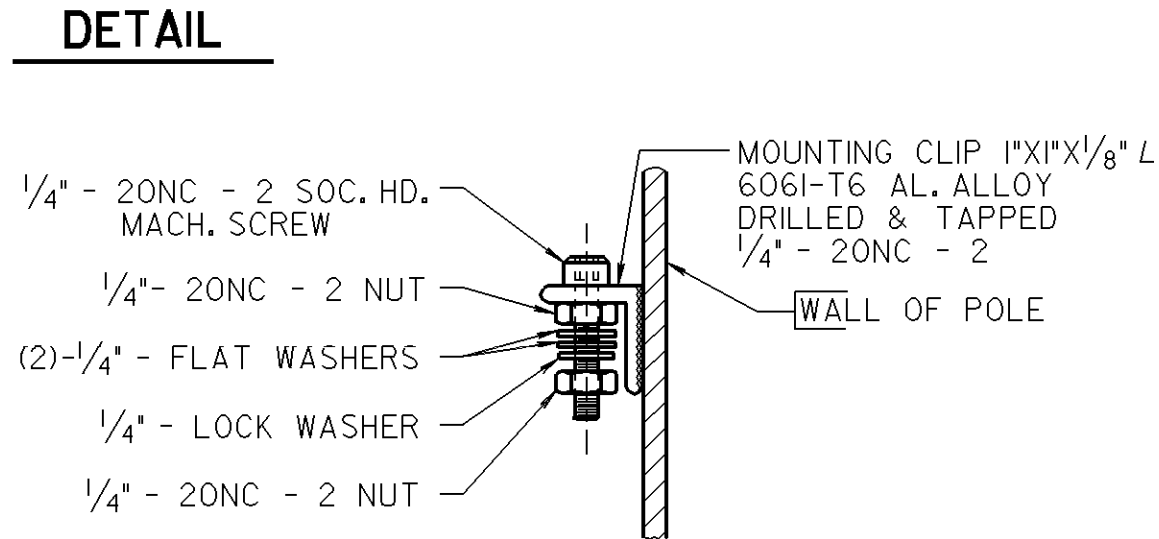
DETAIL



POLE IDENTIFICATION TAG DETAIL

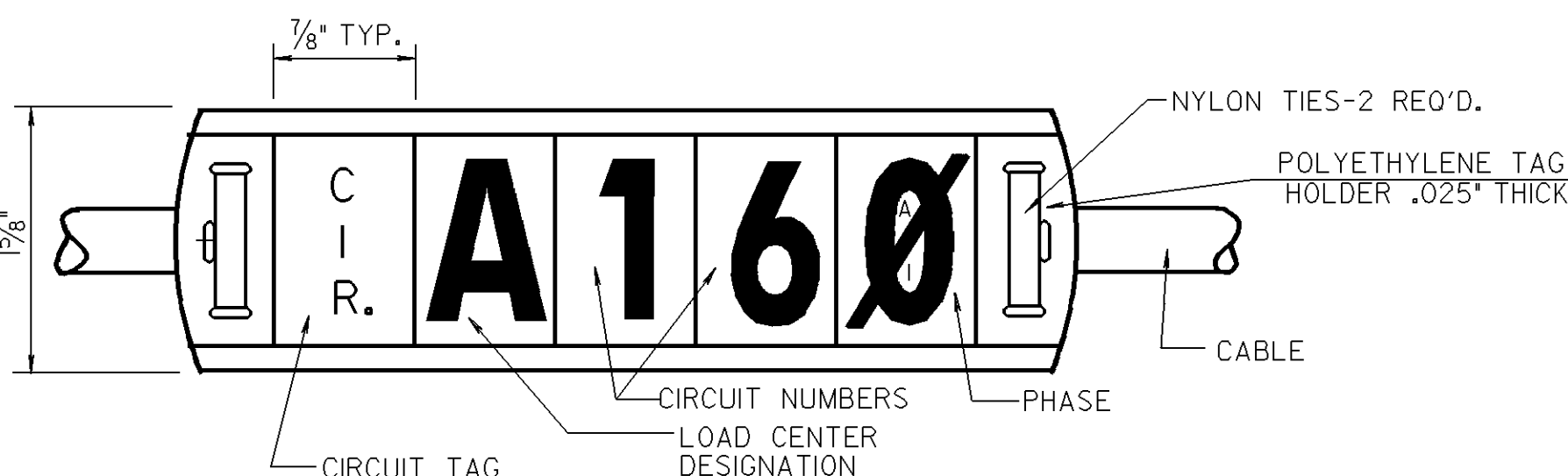
ALL POLES SHALL HAVE IDENTIFICATION TAGS. LETTERS SHALL BE PAINTED BLACK ON ALUMINUM. A BLANK SPACER SHALL BE USED WHEN A NUMBER IS NOT REQUIRED. THE TAG SHALL BE INSTALLED AT 4'-0" FROM GROUND LEVEL. TAG SHALL BE OF SUFFICIENT SIZE TO ACCOMMODATE LOAD CENTERS THAT HAVE MULTIPLE LETTER DESIGNATIONS.

MERCURY VAPOR LAMPS SHALL BE BLUE BACKGROUND,
HIGH PRESSURE SODIUM LAMPS SHALL BE YELLOW
BACKGROUND, WITH THE FOLLOWING NUMBER FOR THE
WATTAGE: 1=150W, 2=250W, 4=400W.



ALTERNATE DETAIL 'D'

GROUND STUD DETAIL
OPPOSITE HANDHOLE



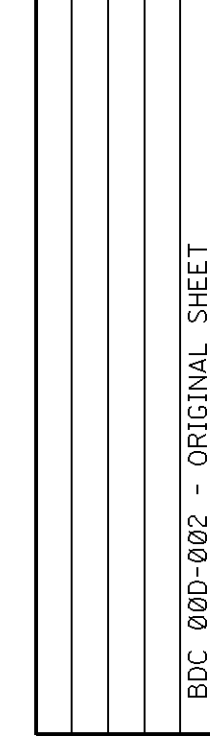
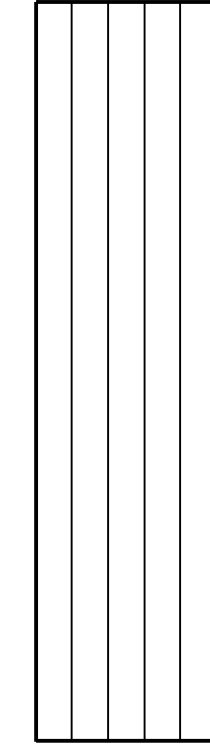
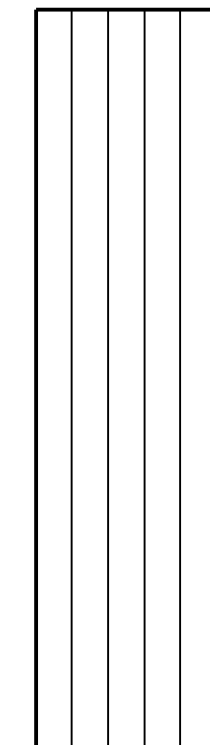
TAG LETTERS SHALL BE BLACK ON YELLOW. THE PHASE SYMBOL SHALL BE:
A=RED, B=BROWN, C=BLUE. ALL NEUTRAL CABLE SHALL HAVE A BLANK WHITE SPACER.
WHEN A LETTER IS NOT REQUIRED A YELLOW SPACER SHALL BE USED.
TAGS SHALL BE INCLUDED IN ALL CABLE ITEMS.
TAG SHALL BE OF SUFFICIENT SIZE TO ACCOMMODATE LOAD CENTERS THAT
HAVE MULTIPLE LETTER DESIGNATIONS.

CABLE IDENTIFICATION TAG DETAIL

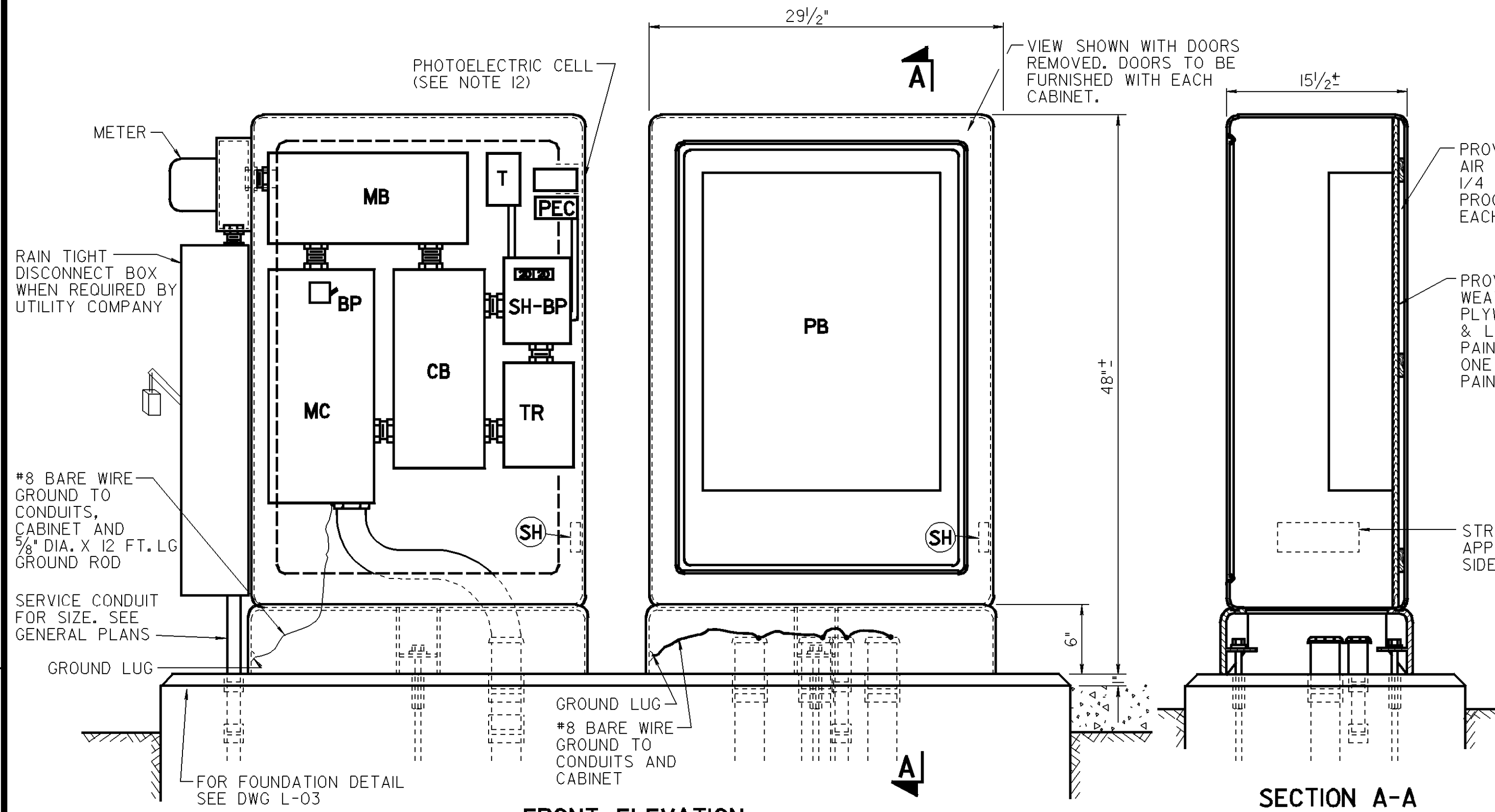
POLE SHALL NOT BE INSTALLED WITHOUT LUMINAIRE

1. ALTERNATE ARRANGEMENT OF TAPERED ELLIPTICAL TRUSS TYPE BRACKET ARM MEMBERS PERMISSIBLE SUBJECT TO APPROVAL. WIRE MUST ENTER UPPER MEMBER 8" FROM TOP OF POLE. ALUMINUM SPLIT CLAMPS SHALL BE PROVIDED.
2. HOLE SHALL BE OF SUFFICIENT DIAMETER TO ACCEPT 1" DIAMETER BOLTS.
3. CERTIFICATIONS SHALL BE FURNISHED THAT ALUMINUM ALLOY AND TEMPER SHOWN MEET REQUIREMENTS AS SET FORTH BELOW OR AS OTHERWISE INDICATED ON DRAWING. ALUMINUM CASTINGS, PERMANENT OR SAND MOLD FOR CLAMPS AND SHOE BASE TRADE DESIGNATION 356-T6. ALUMINUM EXTRUSIONS FOR CLAMPS OR MAST ARM STRUT: CURRENT ASTM SPECIFICATION B-221 ALLOY: 6005-T5, 6061-T6 OR 06G3-T6. THE HARDWARE SUPPLIED SHALL BE: 8-1/2"-13NC HARDWARE, GRADE ASTM A193 B8 STAINLESS STEEL WITH 16 STAINLESS STEEL FLAT WASHERS AND 8 STAINLESS STEEL LOCK WASHERS.
4. FURNISH WITH EACH POLE:
 - 4- 1"-8NC x 3 1/2" LONG HEX HEAD BOLTS ASTM A-193, GRADE B-8, THREADS CLASS 2 FREE FIT, STAINLESS STEEL.
 - 4- 2 1/2" O.D. x 1 1/16" I.D. x 3/8" THK. OR 2 1/4" O.D. x 1 1/16" I.D. x 1/2" THK. LARGE HEAVY STEEL FLAT WASHERS GALVANIZED PER ASTM B695-85 CLASS 50.
 - 8- 1" DIA. PLAIN WASHERS STAINLESS STEEL.
 - 4- 1" DIA. LOCK WASHERS, STAINLESS STEEL.
 - 4- 1" DIA. HEX NUTS, STAINLESS STEEL.
 - 4- BOLT COVERS ALUMINUM ALLOY WITH STAINLESS STEEL SCREWS.
5. ALUMINUM LIGHTING STANDARD ASSEMBLY SHALL BE DESIGNED TO ADEQUATELY SUPPORT A LUMINAIRE OF THE WEIGHT AND PROJECTED AREA AS CALLED FOR IN SCHEDULE I ON THIS SHEET AND THE UNIT ASSEMBLY SHALL NOT EXCEED THE MAXIMUM REQUIREMENTS FOR VERTICAL DEFLECTION AND ANGLE OF TWIST AS SHOWN IN DETAILS WHEN SUBJECTED TO A 104 M.P.H. WIND.
6. A REINFORCED FLUSH HANDHOLE IS REQUIRED ON ALL SB LIGHTING STANDARDS AND SHALL BE LOCATED 20"-24" FROM BASE OF SHAFT. WHEN LOCATED BEHIND CHAINLINK FENCE, THE HANDHOLE SHALL BE LOCATED ONE FOOT ABOVE THE FENCE. A FIBERGLASS HANDHOLE COVER (MODIFIED FOR UV RESISTANCE) SHALL BE USED.
7. UNTAPERED 8" DIAMETER SECTION OF THE 37 FT. SHAFT WILL BE PERMITTED, BUT UNTAPERED SECTION SHALL NOT EXCEED 25 FT. MAXIMUM FROM BASE OF THE SHAFT.
8. THE LIGHTING STANDARD ASSEMBLY MUST BE CERTIFIED TO MEET CURRENT AASHTO BREAKAWAY CRITERIA FOR STRUCTURAL SUPPORTS UTILIZING A TYPE APPROVED TRANSFORMER BASE.
9. UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
10. OPENING SHALL HAVE A MINIMUM DIAMETER OF 6". THE GEOMETRY SHALL BE DETERMINED BY THE MANUFACTURER.
11. ALL LIGHTING STANDARD ASSEMBLIES, OF A PARTICULAR TYPE, SHALL BE IDENTICAL IN ALL ASPECTS.
12. ALL DIMENSIONS OF CASTINGS SHALL BE $\pm 1/32"$.
13. THE MANUFACTURER SHALL SUPPLY ALL OTHER HARDWARE WHICH HE DEEMS NECESSARY TO INSTALL THE POLE ON THE BASE AS WELL AS INSTRUCTION FOR INSTALLATION.

REFERENCE

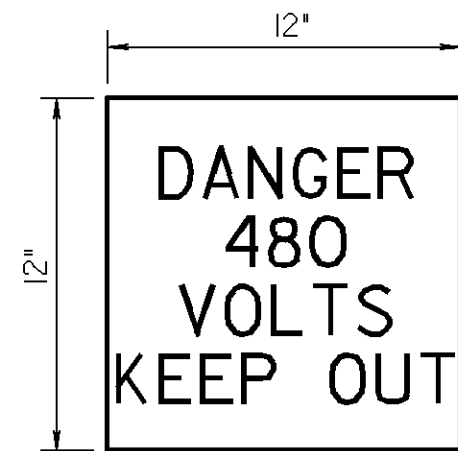


BDC 000-002 - ORIGINAL SHEET



FRONT ELEVATION
METER CABINET TYPE 2M

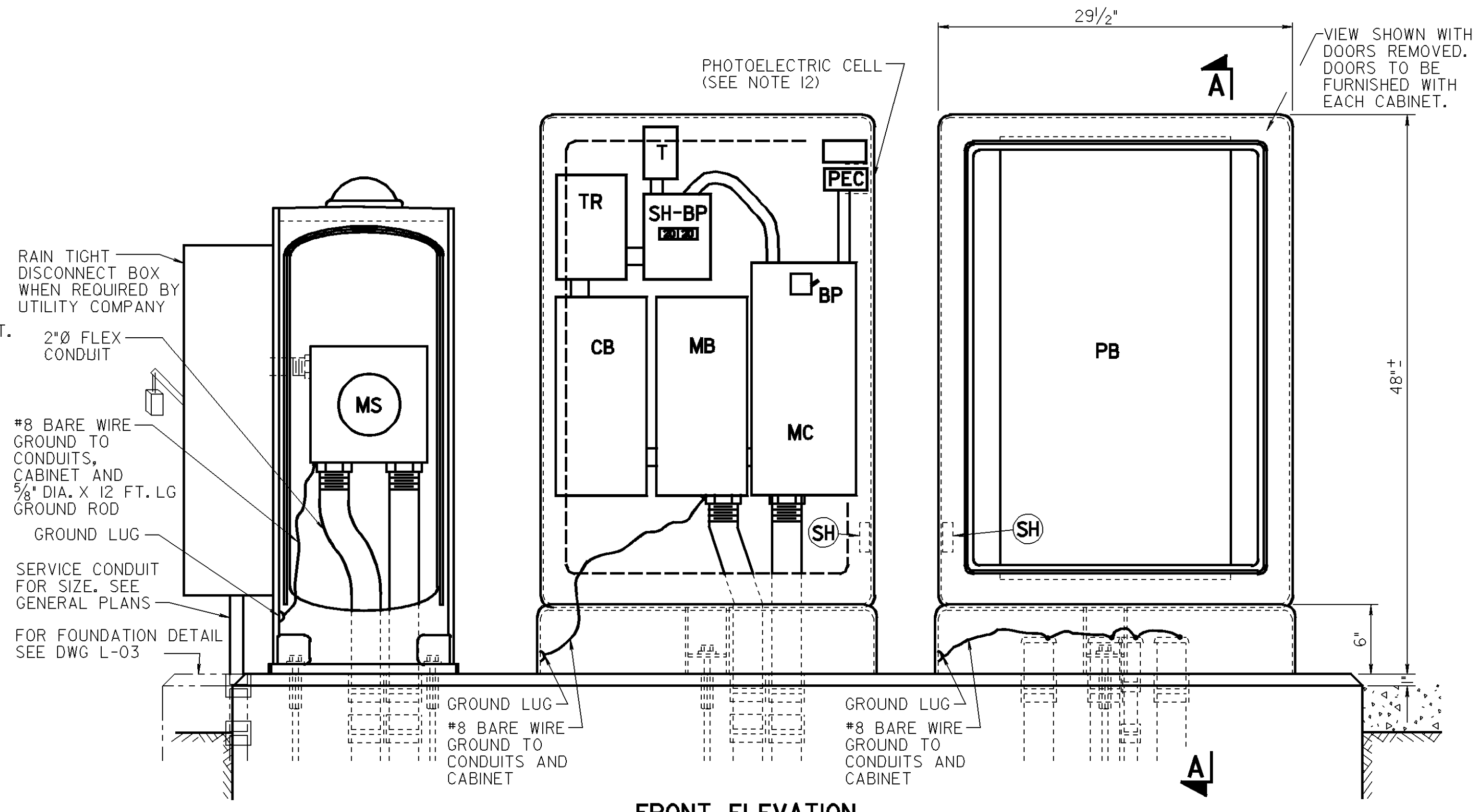
SECTION A-A



ENAMELED METAL SIGN TO BE
INSTALLED ON DOOR OF EACH
LOAD CENTER CABINET
WHITE WITH RED LETTERS.

NOTES:

- 5/8" DIA. X 12 FT. LG. GROUND ROD.
- CONTRACTOR SHALL PROVIDE SCALE DRAWING TO VERIFY THAT PROPOSED COMPONENTS WILL FIT IN CABINET.
- CABINET TYPE M-CAST ALUMINUM CABINET - SEC. 906.12-FURNISHED WITH DOOR AND LOCK FABRICATED IN ACCORDANCE WITH STANDARD DETAILED DRAWING. DETAILS FURNISHED UPON REQUEST OR APPROVED EQUAL.
- LOCATION OF METER CABINET FOUNDATION, SIZE, NUMBER AND DIRECTION OF CONDUIT RUN SHALL BE TAKEN FROM THE GENERAL ELECTRICAL PLANS FOR THE AREA WHERE REQUIRED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.
- GROUNDING FACILITIES SHALL BE INSTALLED IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS & N.E.C.
- TERMINATE ALL CONDUITS WHEN ENTERING ENCLOSURES WITH LOCKNUT AND BONDING BUSHINGS. ALL OTHER CONDUITS SHALL BE PROVIDED WITH BONDING BUSHINGS. ALL CONDUITS TO BE BONDED WITH #8 AWG. STANDED BARE COPPER GROUND WIRE.
- ALL CIRCUIT BREAKERS TO BE PLUG-IN TYPE, SHALL MEET FEDERAL SPECIFICATION W-C-375-B. THE INTERRUPTING RATING IN SYMETRICAL AMPERS SHALL BE, 120 VOLTS - 7,500 AMPS MIN., 240 VOLTS - 10,000 AMPS MIN. AND 480 VOLTS - 18,000 AMPS MIN.
- LOAD CENTERS SHALL BEAR UNDERWRITERS LABORATORIES LABEL.
- WIRES IN CABINET SHALL BE ARRANGED IN A WORKMAN-LIKE MANNER USING WAXING SERVING CORD OR NYLON SELF CLINCHING STRAPS OR APPROVED EQUAL.
- FOR METER CABINET FOUNDATION DETAILS, SEE DWG. L-03
- SERVICE DISCONNECT SWITCH-480 VOLT, 100A, 2 POLE S/N, NEMA 3 R ENCLOSURE WITH PADLOCK PROVISIONS (LOCK TO BE SUPPLIED BY UTILITY CO.)
- PHOTOELECTRIC CONTROL TO BE MOUNTED INSIDE CABINET. HOLE IN CABINET FOR PHOTOCCELL SHALL BE 3" X 3" MIN. AND SHALL BE COVERED WITH CLEAR 1/4" PLEXIGLASS. PHOTOELECTRIC CONTROL SHALL BE MOUNTED WITH PHOTOCCELL FACING NORTH. PHOTOCCELL MAY BE REPOSITIONED TO AVOID BEING AFFECTED BY ARTIFICIAL LIGHT.
- LUG ON 30 AMP CIRCUIT BREAKER SHALL BE CAPABLE OF ACCEPTING A NO. 2 AWG WIRE.



FRONT ELEVATION
METER CABINET TYPE 2M-MC

METER CABINET TYPE 2M - 240/480V		
SYMBOL	APPARATUS DESCRIPTION	RATING
MB	MAIN BREAKER 2 POLE 480 VOLT S/N NEMA TYPE I ENCLOSURE	100 AMP
CB	CONTROL DISCONNECT CIRCUIT BREAKER 2 POLE S/N 480 VOLT NEMA TYPE I ENCLOSURE	15 AMP
BP	PHOTOELECTRIC CONTROL BY-PASS SWITCH BUILT INTO CONTACTOR ENCLOSURE	15 AMP
MC	MAGNETIC CONTACTOR 2 POLE 480 VOLT WITH 120 VOLT COIL, NEMA TYPE I ENCLOSURE	100 AMP
SH	STRIP HEATER 400W-120V WITH STAINLESS STEEL OR CHROME SHEATH MOUNTED ON PORCELAIN STAND-OFF	N.A.
T	THERMOSTAT LINE VOLTAGE-OPERATING RANGE 50°F. TO 70°F. 120V RATING 2000 WATTS SINGLE POLE.	N.A.
TR	CONTROL TRANSFORMER PRIMARY 240/480 VOLT. SECONDARY 120 VOLT.	N.A.
PB	LIGHTING DISTRIBUTION PANEL SINGLE PHASE-3 WIRE S/N MIN. 12 CIRCUITS-240/480 VOLT DEAD FRONT PANEL-NO ENCL. BREAKER 30 AMP, 240 VOLTS, SINGLE POLE.	30 AMP
MS	METER SOCKET 200 AMP 3 WIRE, 240/480 VOLT SINGLE Ø INSTALLED BY CONTRACTOR, FURNISHED BY UTILITY CO.; IN JCPL AREA, FURNISHED BY CONTRACTOR.	N.A.
PEC.	PHOTOELECTRIC CONTROL 120 VOLTS, 1800 VA	N.A.
SH-BP	CIRCUIT BREAKER, 120V, (2) 1 POLE, NEMA TYPE I ENCLOSURE FOR STRIP HEATER AND PHOTOELECTRIC BY-PASS SWITCH	20 AMP

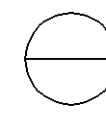
METER CABINET TYPE 2M-MC - 240/480V		
SYMBOL	APPARATUS DESCRIPTION	RATING
MB	MAIN BREAKER 2 POLE 480 VOLT S/N NEMA TYPE I ENCLOSURE	100 AMP
CB	CONTROL DISCONNECT CIRCUIT BREAKER 2 POLE 480 VOLT S/N NEMA TYPE I ENCLOSURE	15 AMP
BP	PHOTOELECTRIC CONTROL BY-PASS SWITCH BUILT INTO CONTACTOR ENCLOSURE	15 AMP
MC	MAGNETIC CONTACTOR 2 POLE 480 VOLT WITH 120 VOLT COIL, NEMA TYPE I ENCLOSURE	100 AMP
SH	STRIP HEATER 400W-120V WITH STAINLESS STEEL OR CHROME SHEATH MOUNTED ON PORCELAIN STAND-OFF	N.A.
T	THERMOSTAT LINE VOLTAGE-OPERATING RANGE 50°F. TO 70°F. 120V RATING 2000 WATTS SINGLE POLE.	N.A.
TR	CONTROL TRANSFORMER PRIMARY 240/480 V. SECONDARY 120V.	N.A.
PB	LIGHTING DISTRIBUTION PANEL SINGLE PHASE-3 WIRE S/N MIN. 12 CIRCUITS-240/480 VOLT DEAD FRONT PANEL-NO ENCL. BREAKER 30 AMP, 240 VOLTS, SINGLE POLE.	30 AMP
MS	METER SOCKET 200 AMP 3 WIRE, 240/480 VOLT SINGLE Ø INSTALLED BY CONTRACTOR, FURNISHED BY UTILITY CO.; IN JCPL AREA, FURNISHED BY CONTRACTOR.	N.A.
PEC.	PHOTOELECTRIC CONTROL 120 VOLTS, 1800 VA	N.A.
SH-BP	CIRCUIT BREAKER, 120V, (2) 1 POLE, NEMA TYPE I ENCLOSURE FOR STRIP HEATER AND PHOTOELECTRIC BY-PASS SWITCH	20 AMP

NEW JERSEY DEPARTMENT OF TRANSPORTATION

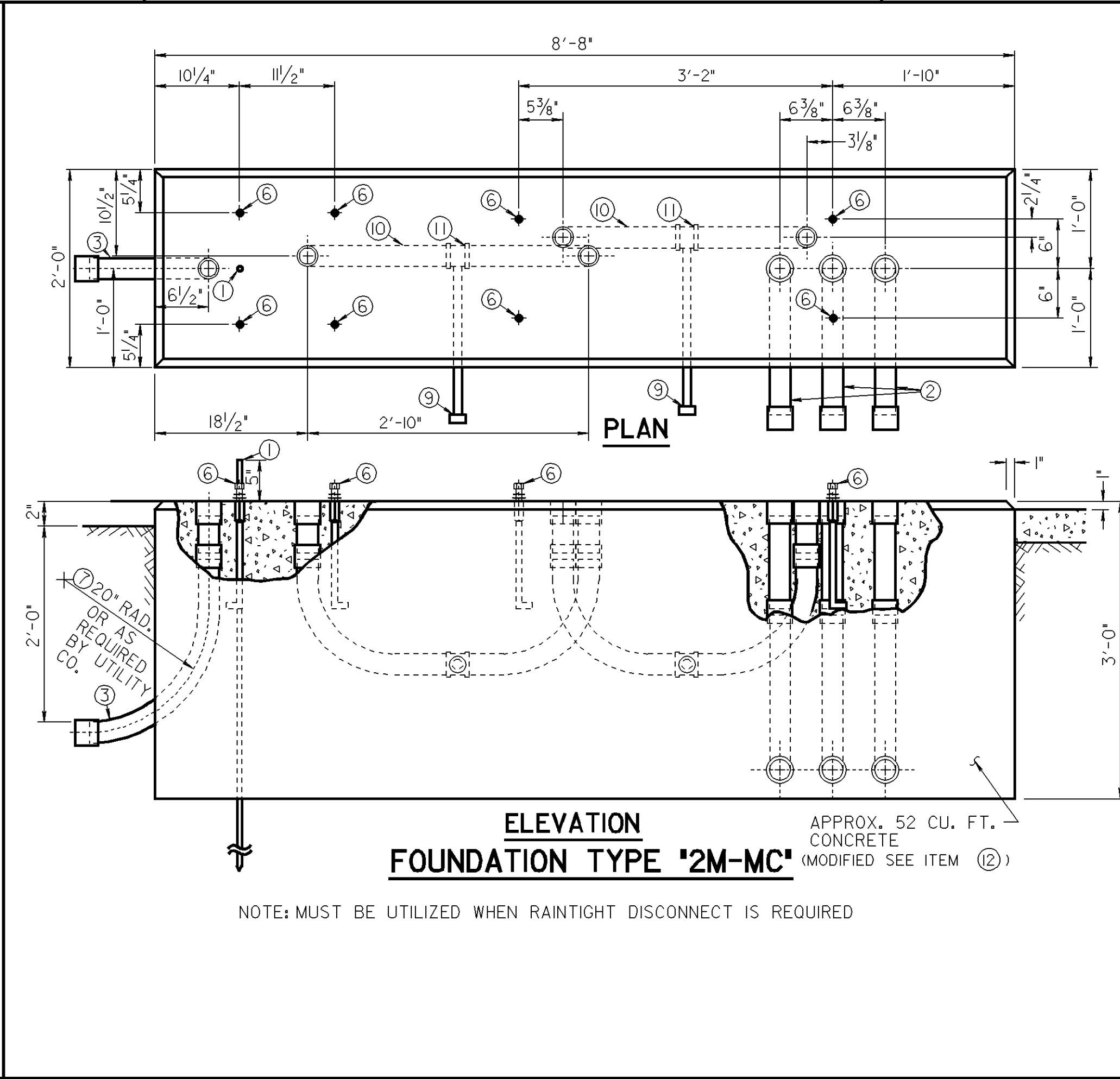
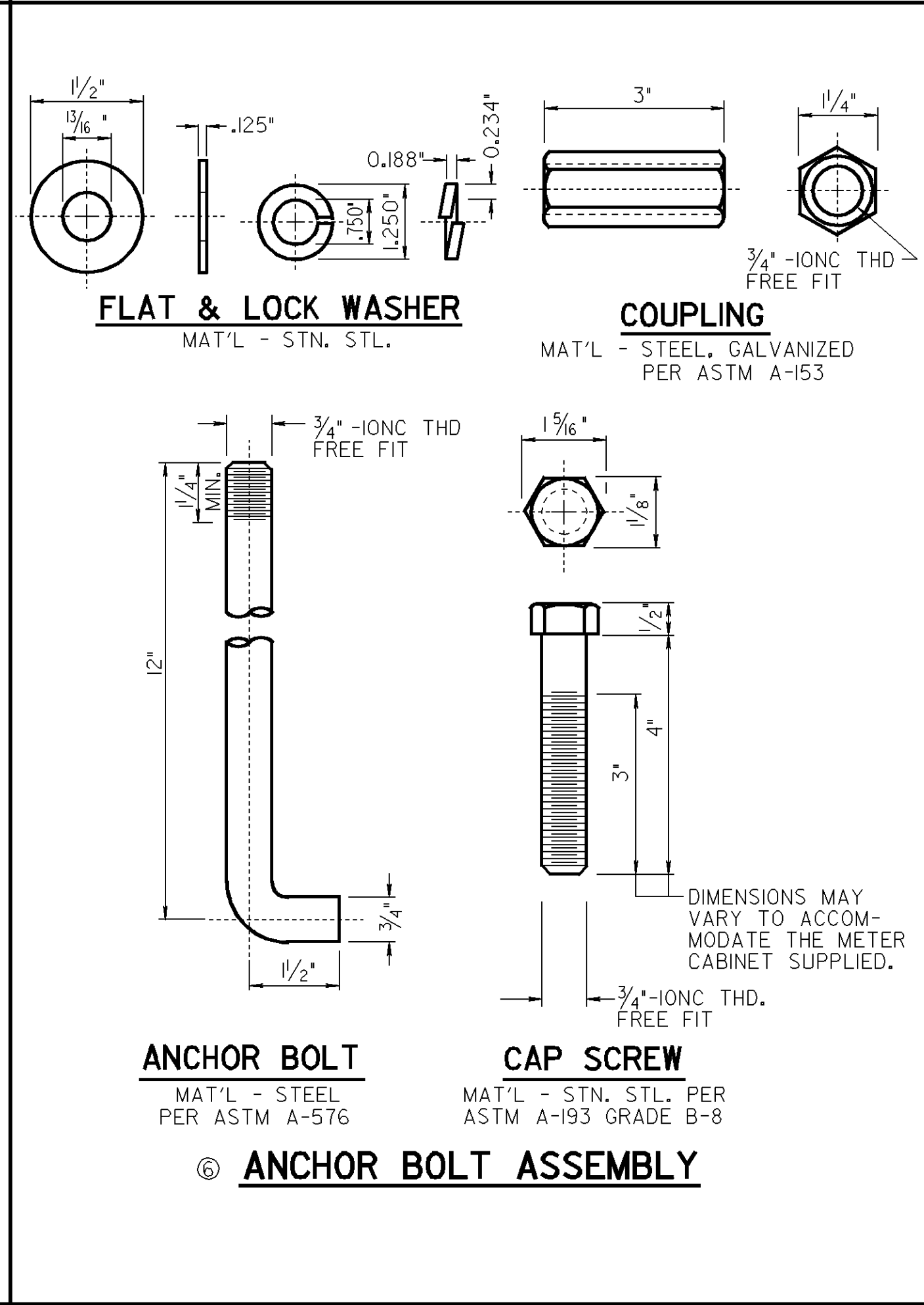
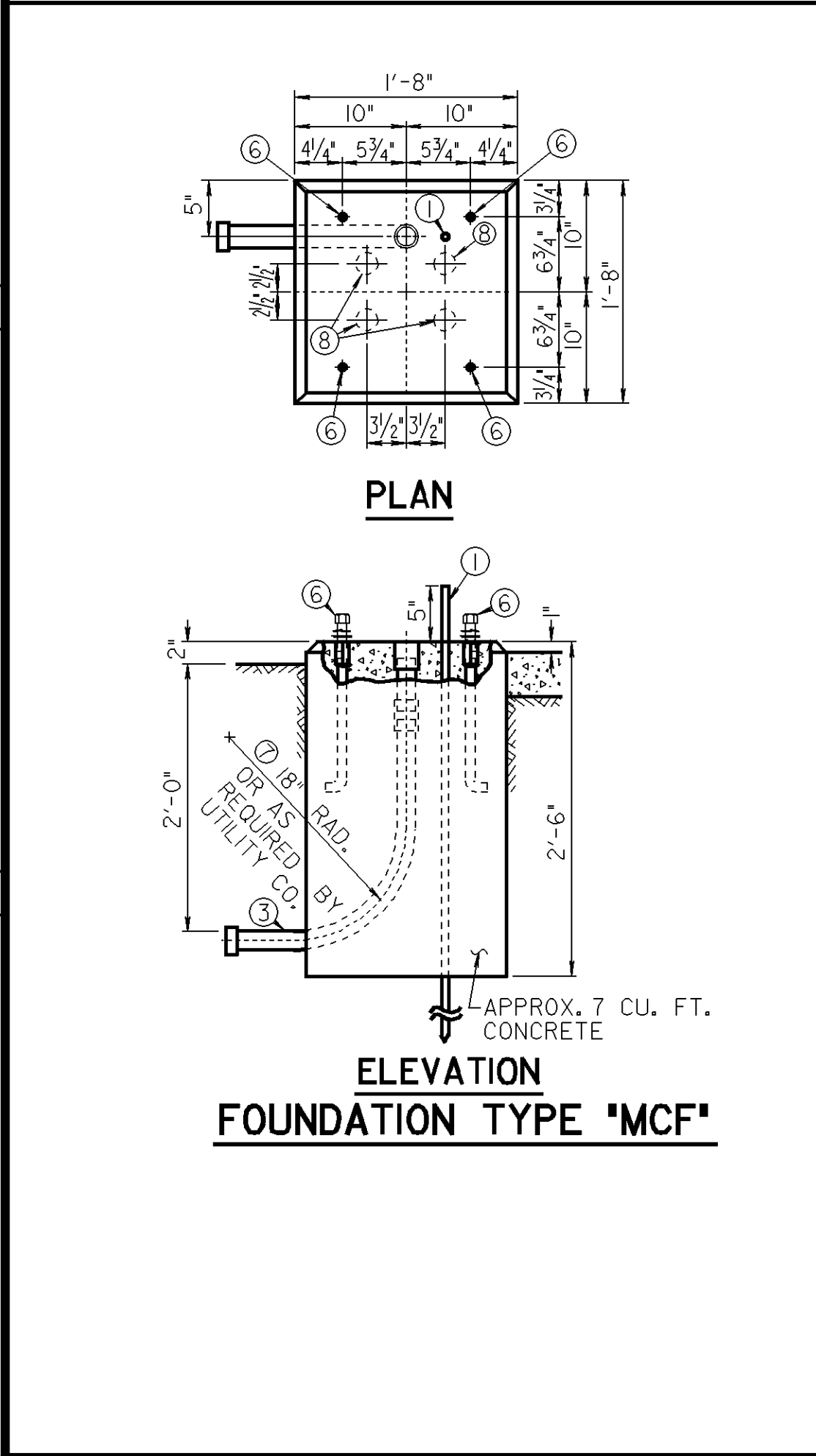
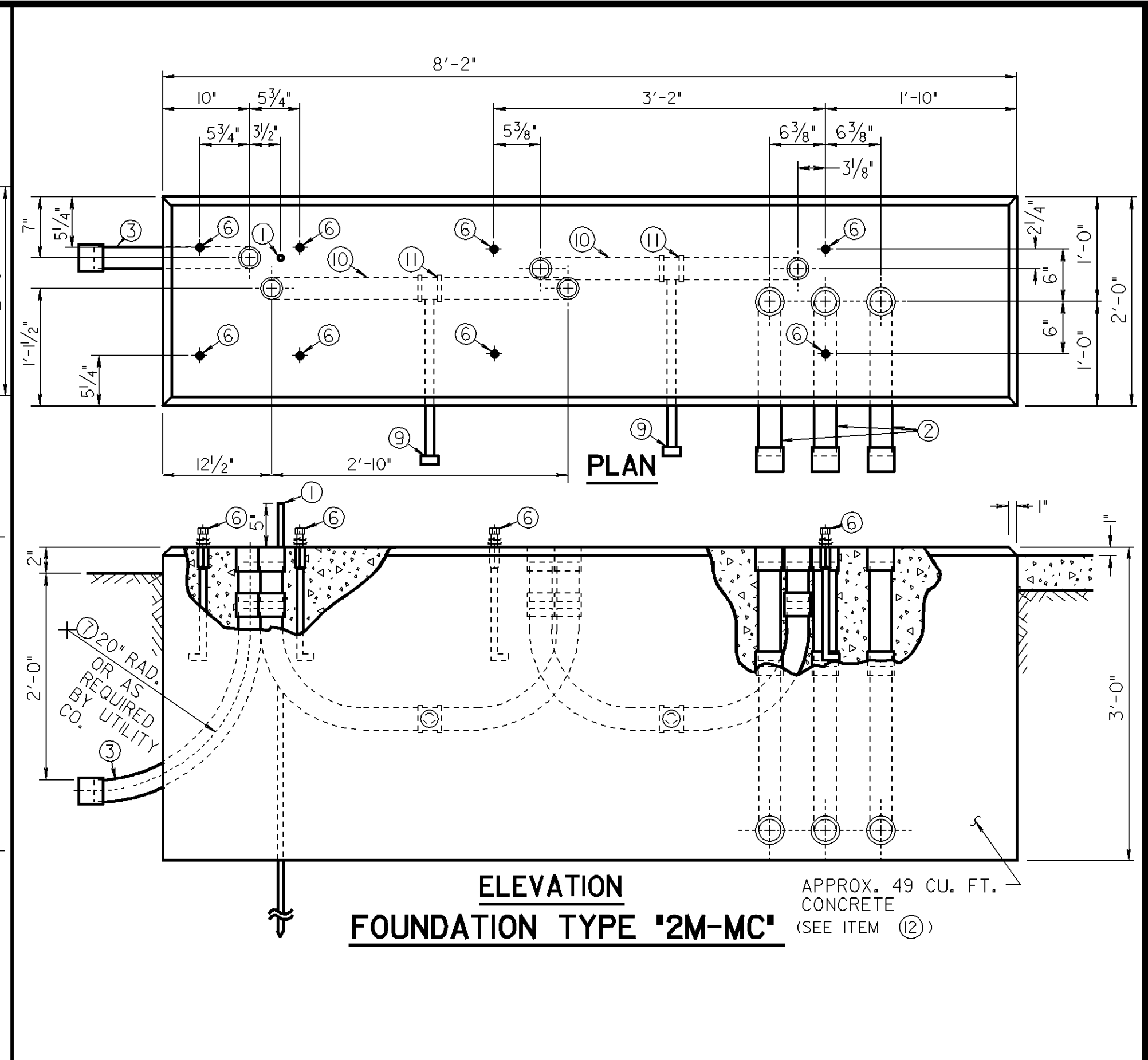
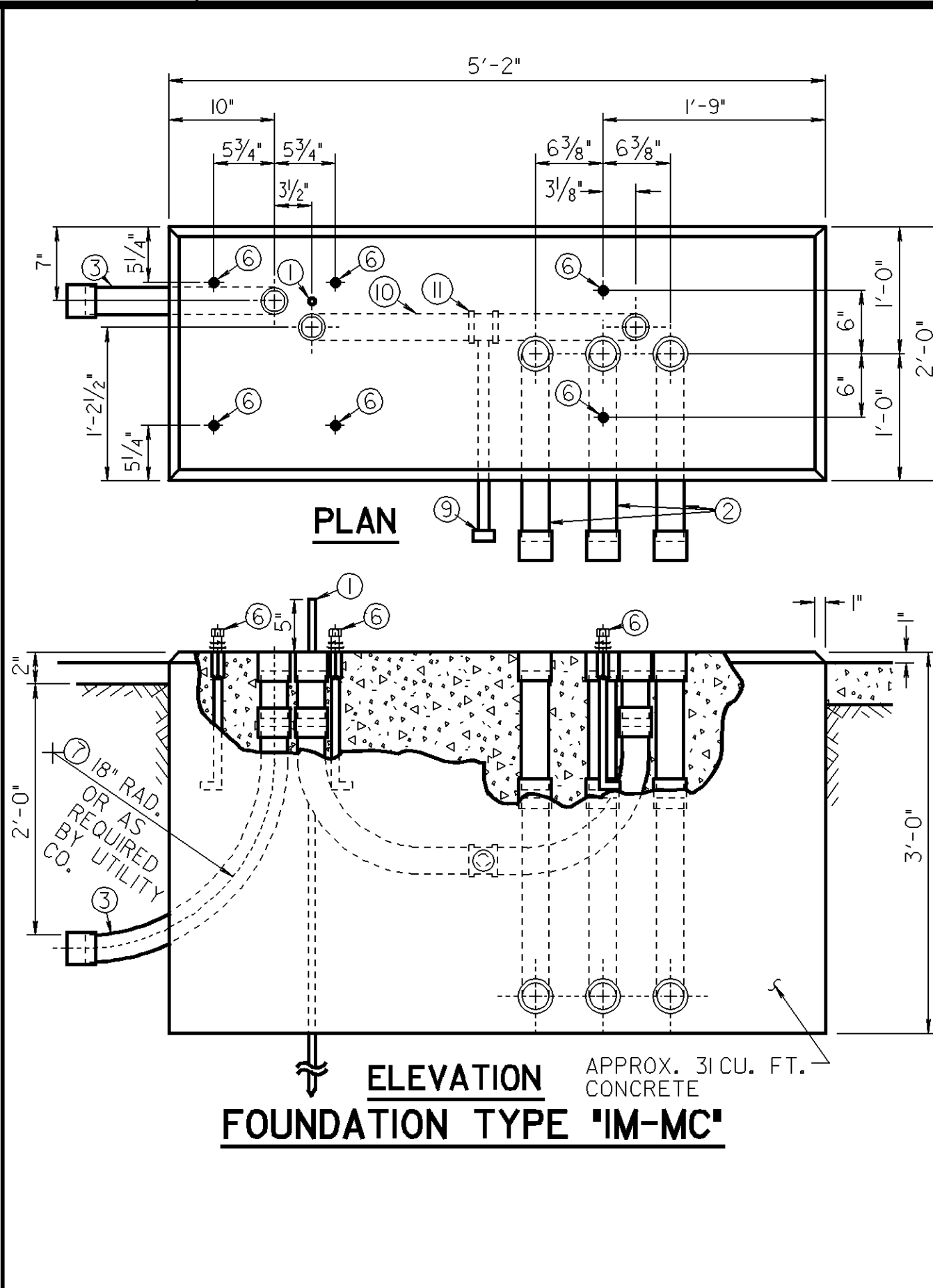
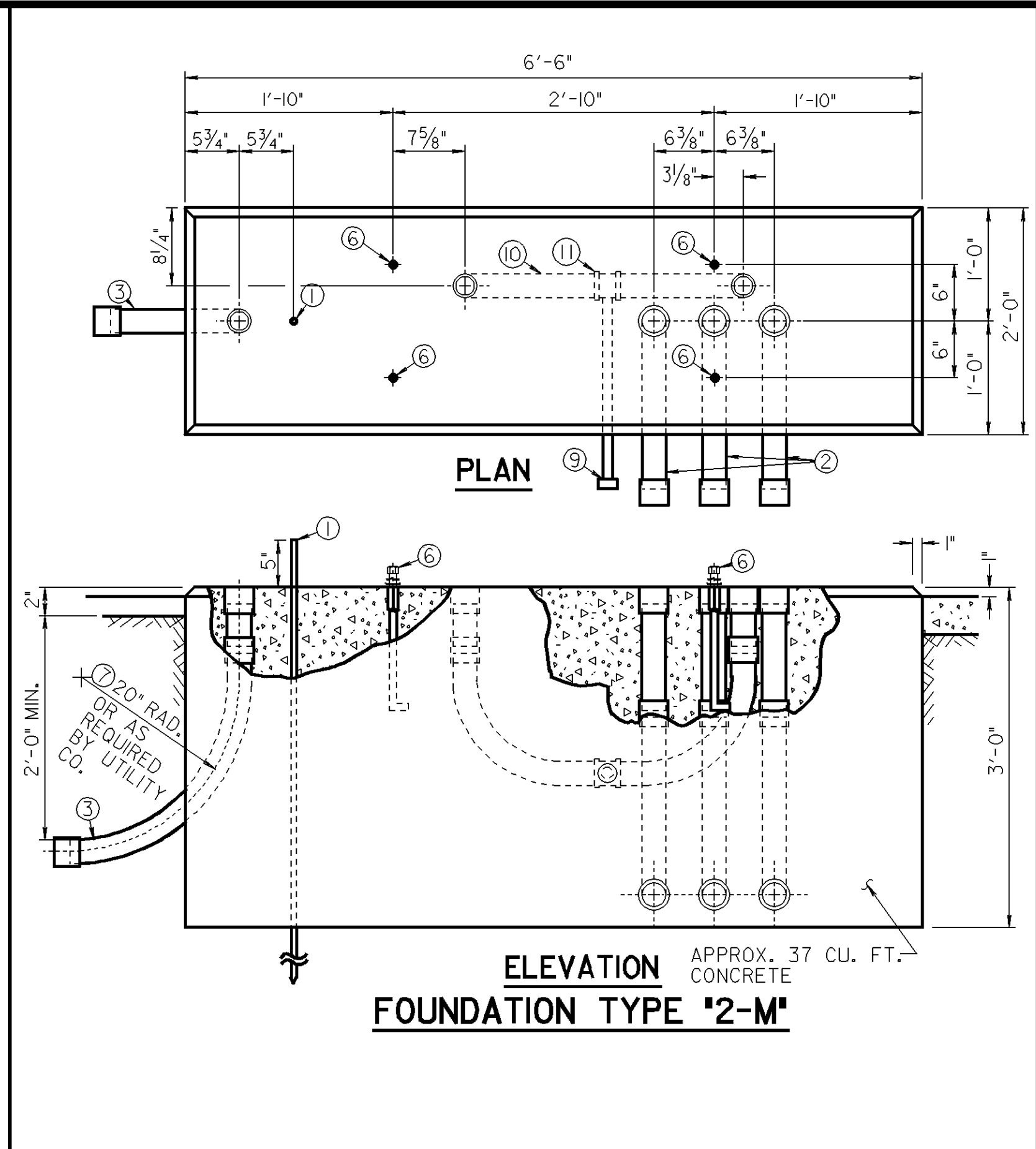
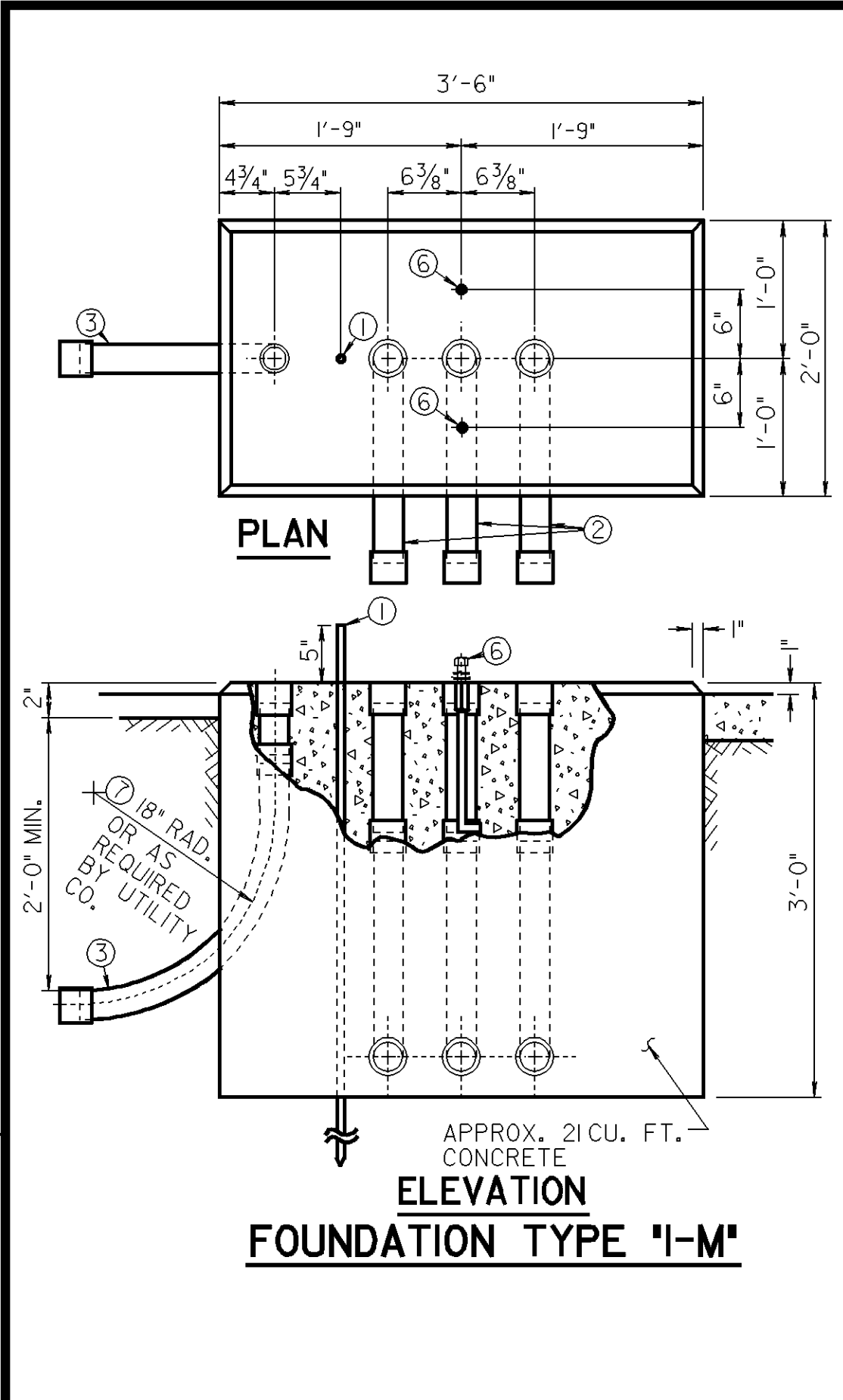
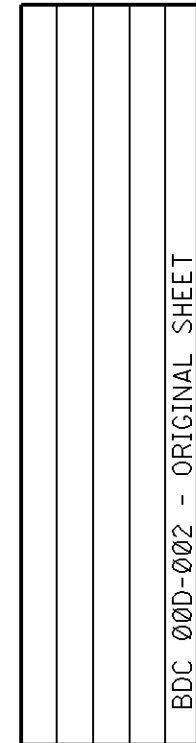
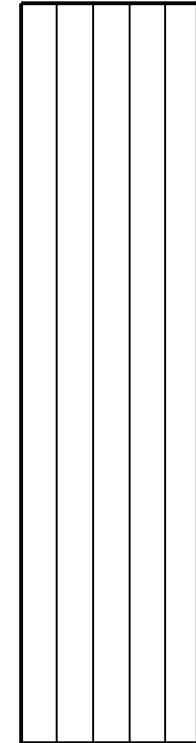
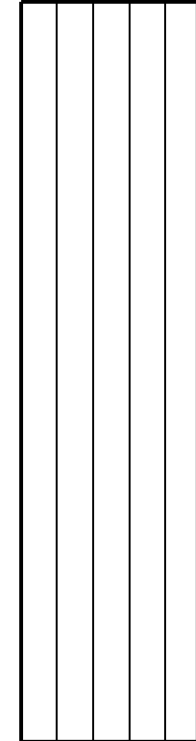
ELECTRICAL DETAILS
N.T.S.

METER CABINET TYPE 2M 240/480 VOLT
AND 2M-MC 240/480 VOLT

L-020I

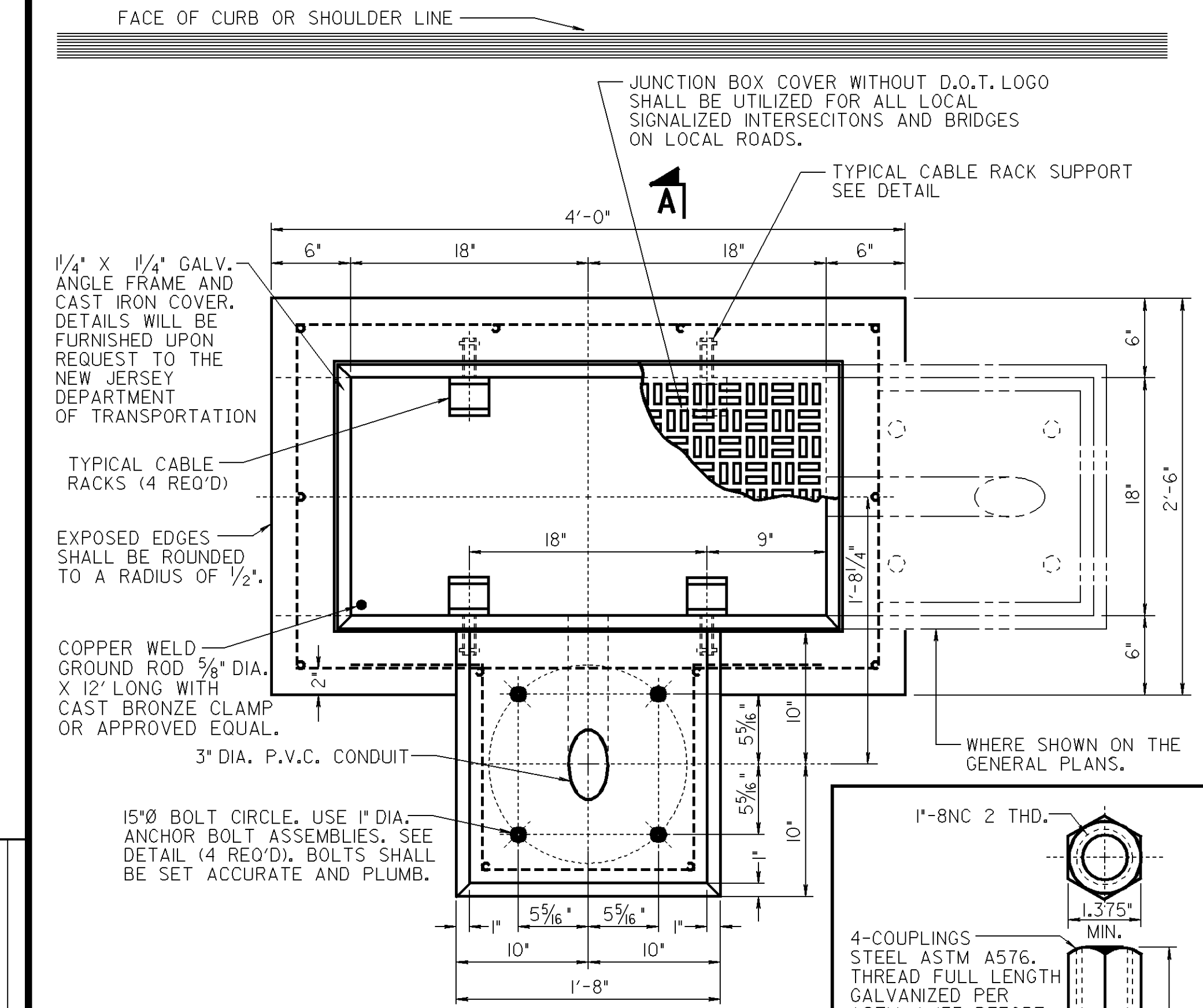
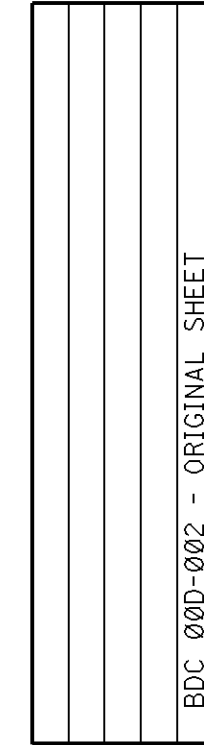
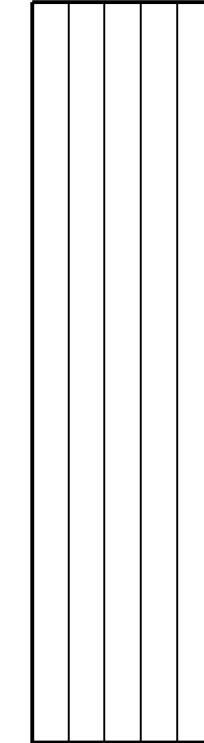
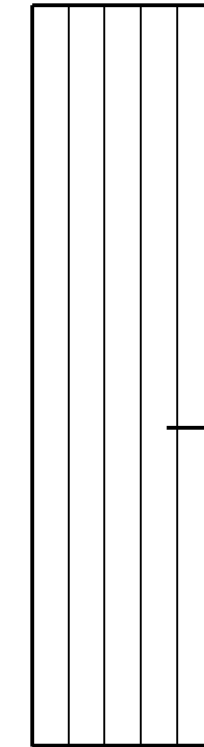


REFERENCE



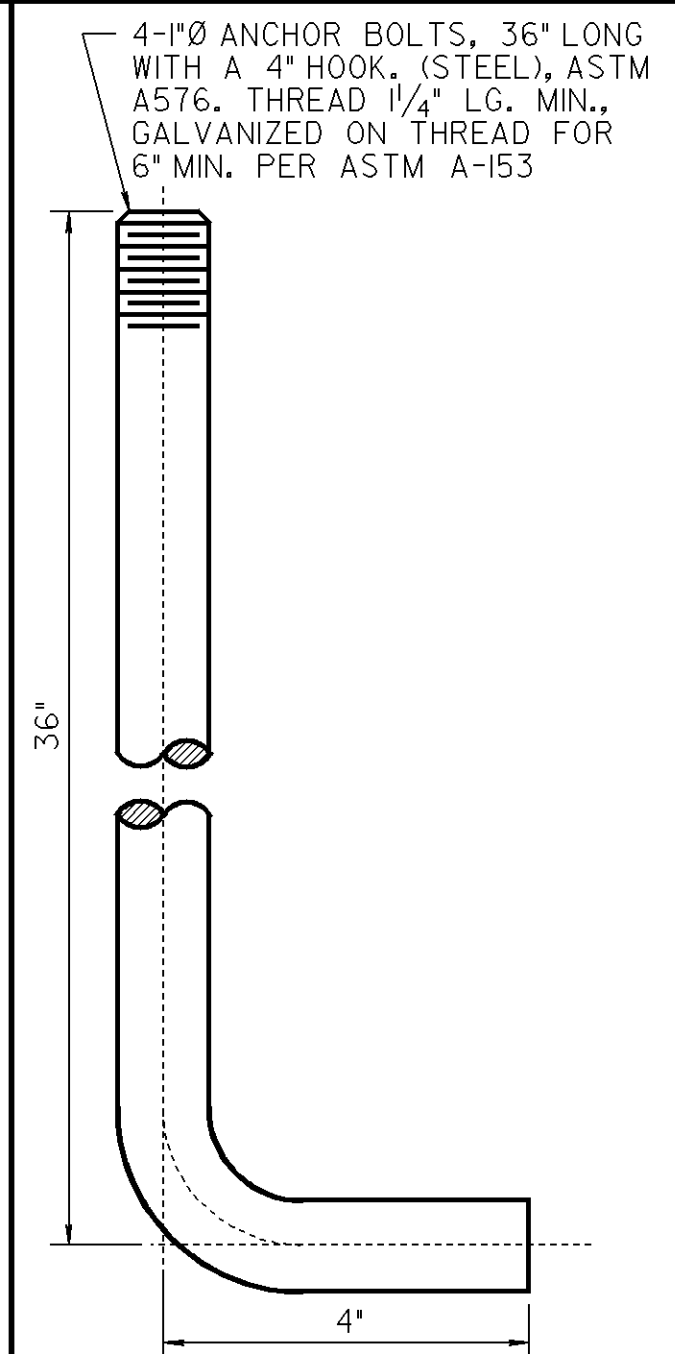
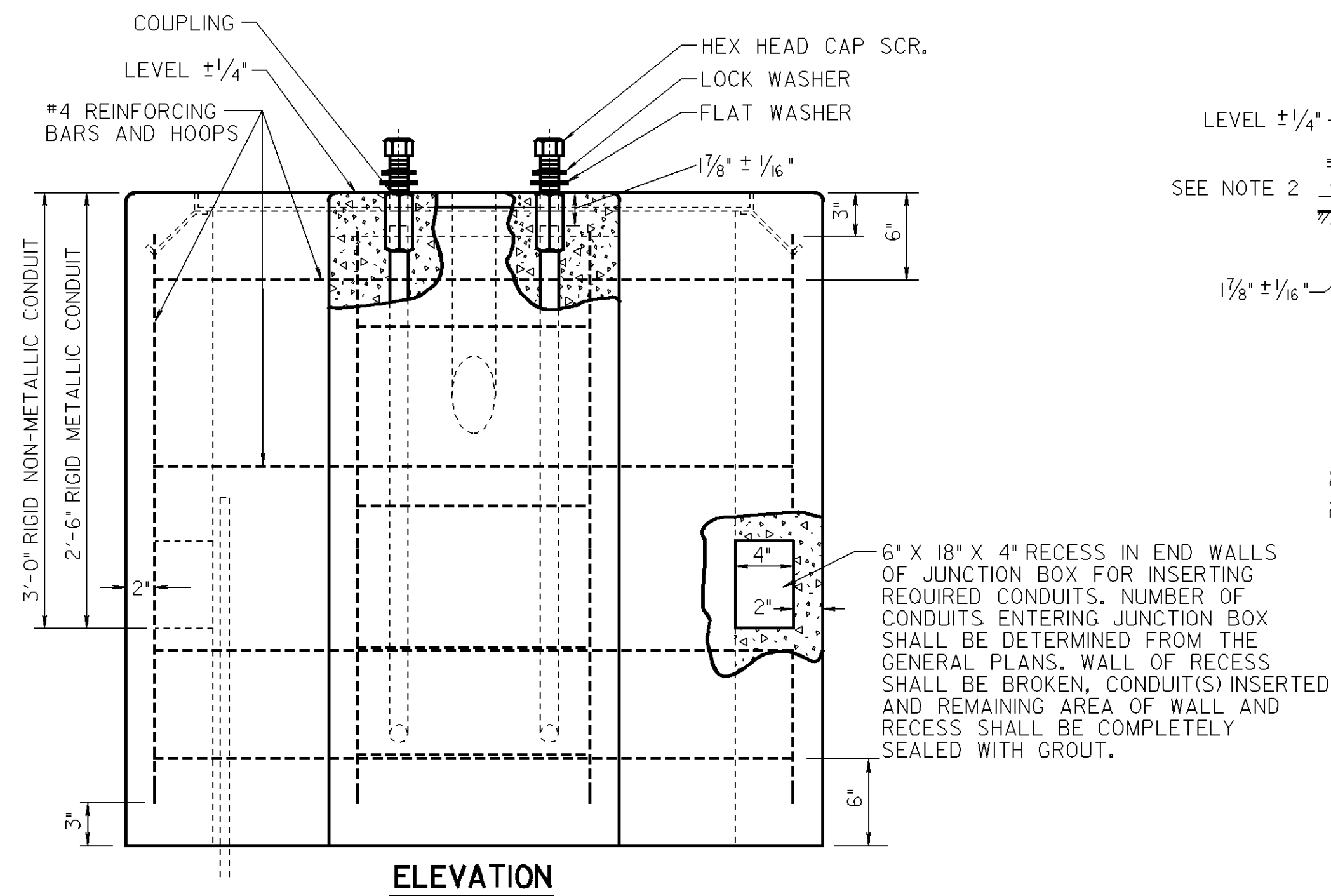
ITEM	
①	5/8" DIA. X 12 FT. LONG GROUND ROD.
②	3" DIA. RIGID METALLIC CONDUIT.
③	RIGID METALLIC SERVICE CONDUIT. (SEE GENERAL CONSTRUCTION PLANS FOR DIRECTION AND SIZE.)
⑤	PLUG/CAP ALL CONDUIT ENDS.
⑥	ANCHOR BOLT DETAIL AS SHOWN.
⑦	RADIUS - SUBJECT TO APPROVAL OF UTILITY COMPANY.
⑧	LOCATIONS FOR DISTRIBUTION CONDUITS - FOR NUMBER, SIZE AND POSITION SEE GENERAL PLANS.
⑨	DRAIN - 1" DIA. RIGID METALLIC CONDUIT. (PITCH DOWN TO JUNCTION BOX.)
⑩	2" DIA. RIGID METALLIC CONDUIT.
⑪	2" X 2" X 1" GALVANIZED TEE FITTING FOR DRAIN.
⑫	FOUNDATION AS REQUIRED BY UTILITY COMPANY.
NOTE: ALL CONCRETE SHALL BE CLASS "C".	
NEW JERSEY DEPARTMENT OF TRANSPORTATION	
ELECTRICAL DETAILS N.T.S.	
METER CABINET FOUNDATION TYPE '1-M', '2-M', '1M-MC', '2M-MC' & 'MCF'	
L-0301	

REFERENCE

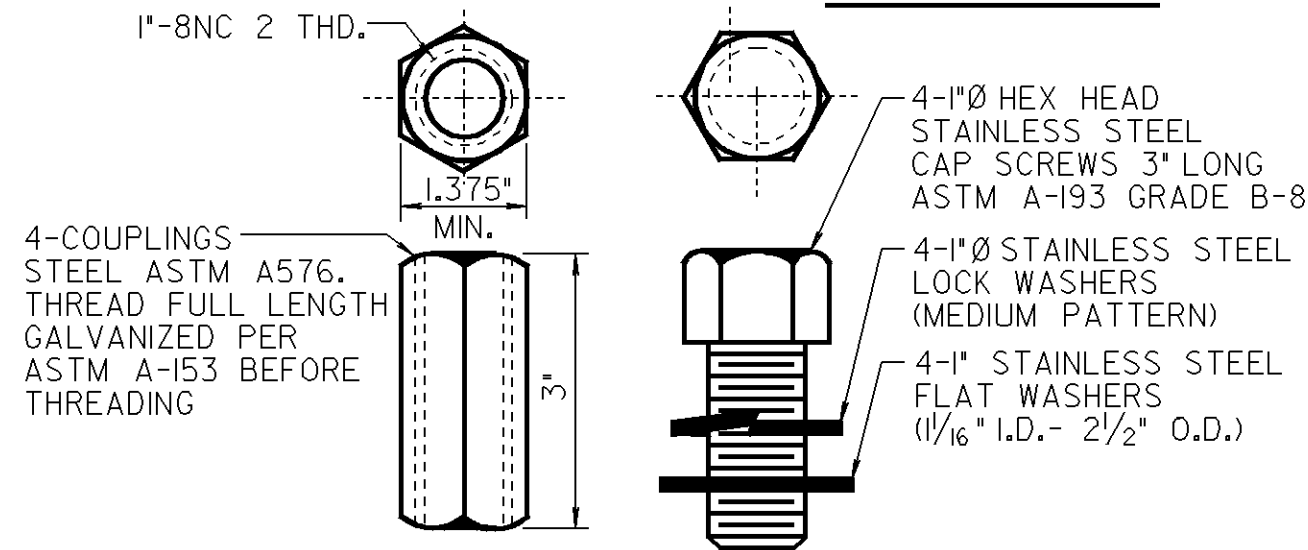


NOTES:

- A. MATERIALS AND CONSTRUCTION SHALL CONFORM TO N.J.D.O.T. STANDARD SPECIFICATIONS UNLESS OTHERWISE AMENDED.
- B. CONCRETE CLASS "C" USING APPROVED 5/8" AGGREGATE 1.08 CUBIC YARDS



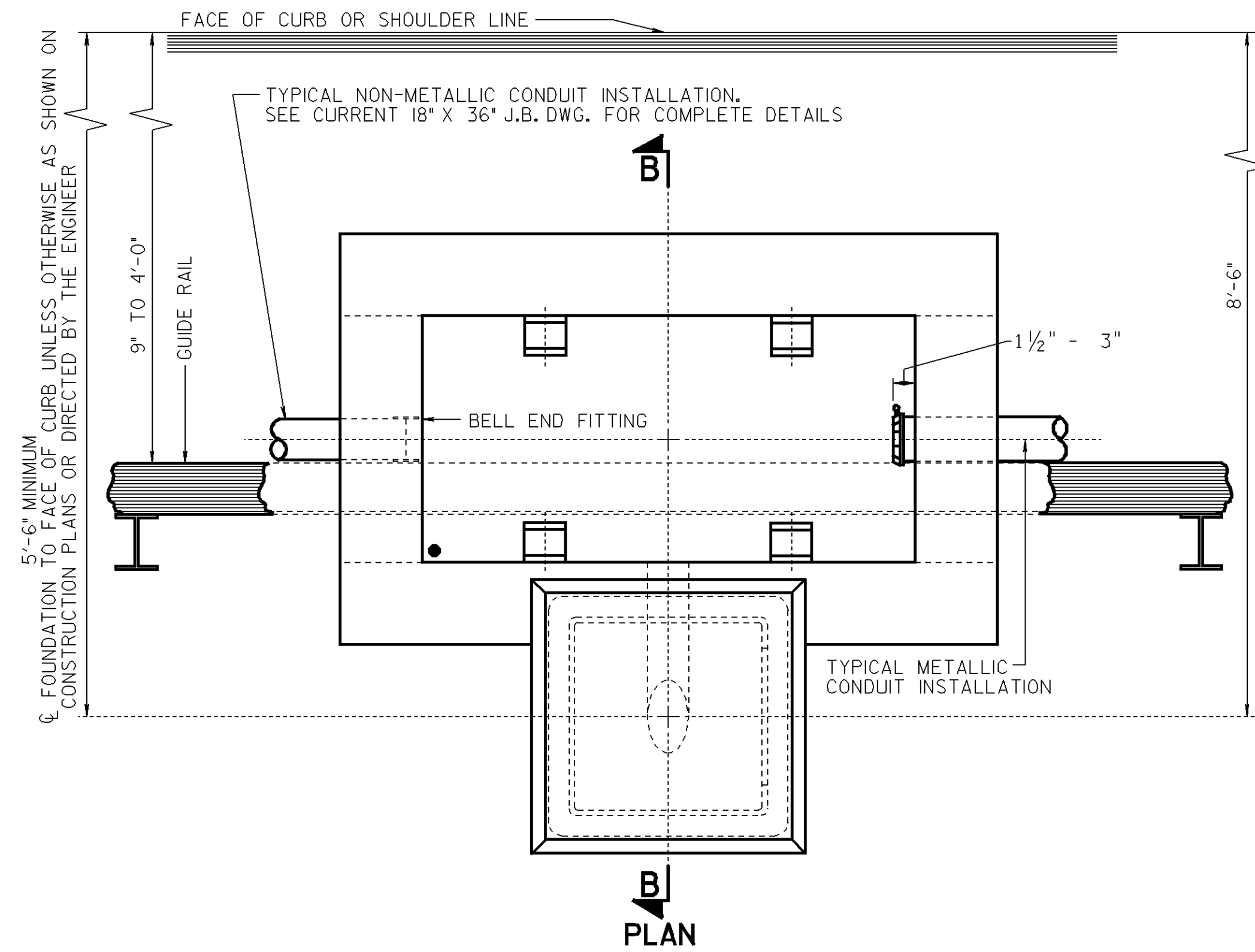
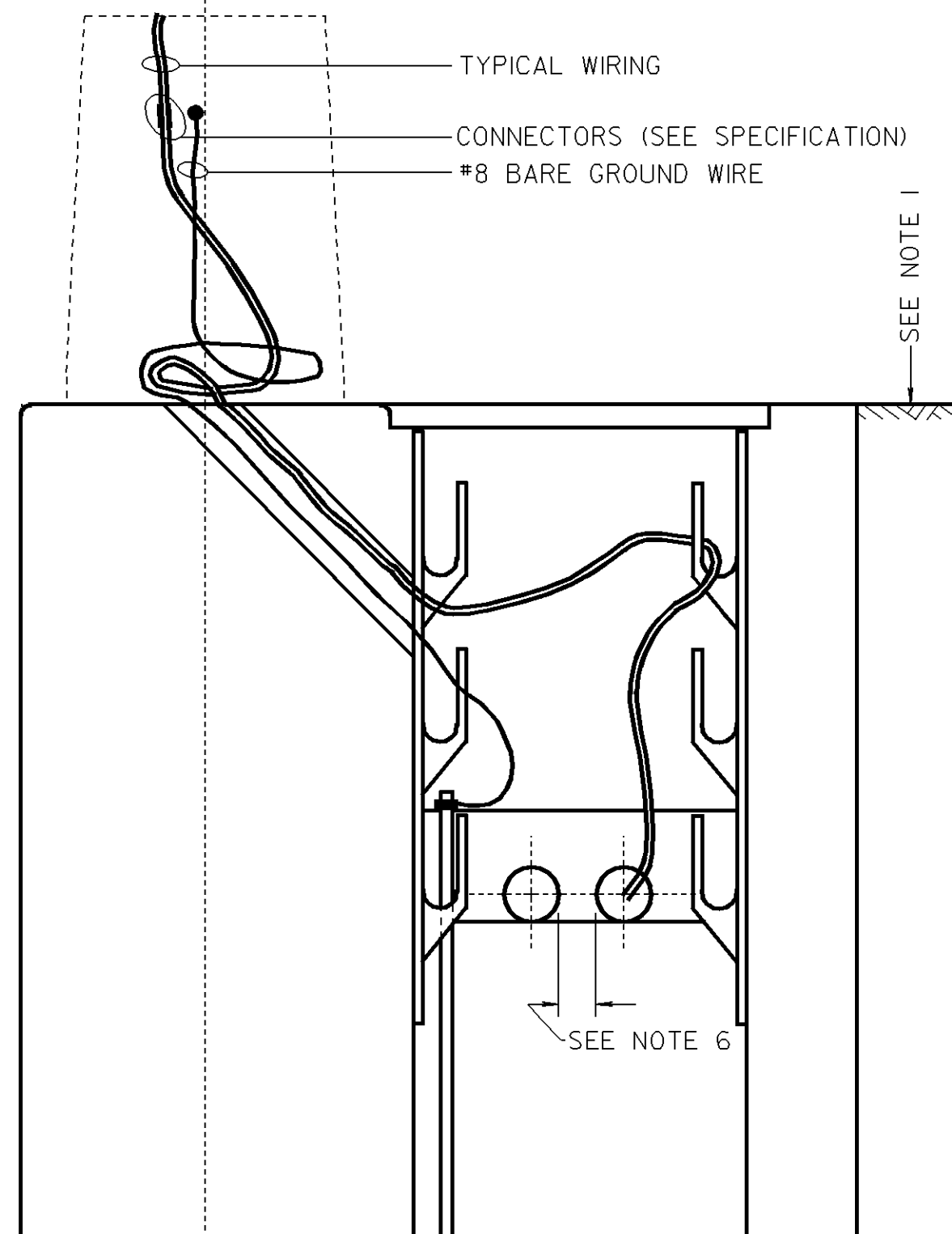
ANCHOR BOLT



NOTES

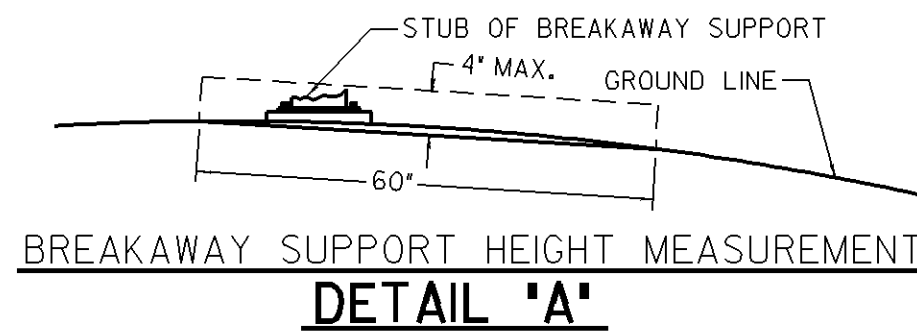
- 1.) ANCHOR BOLTS TO BE SET 1 1/8" ± 1/16" INTO COUPLINGS SO THAT CAP SCREWS WHEN TIGHTENED, SECURING POLE BASE TO FOUNDATION, WILL NOT BUTT AGAINST TOP OF ANCHOR BOLTS.
- 2.) ALL THREADS SHALL BE 8 THREADS PER INCH, NC, FREE FIT CLASS-2.

DETAIL OF ANCHOR BOLTS

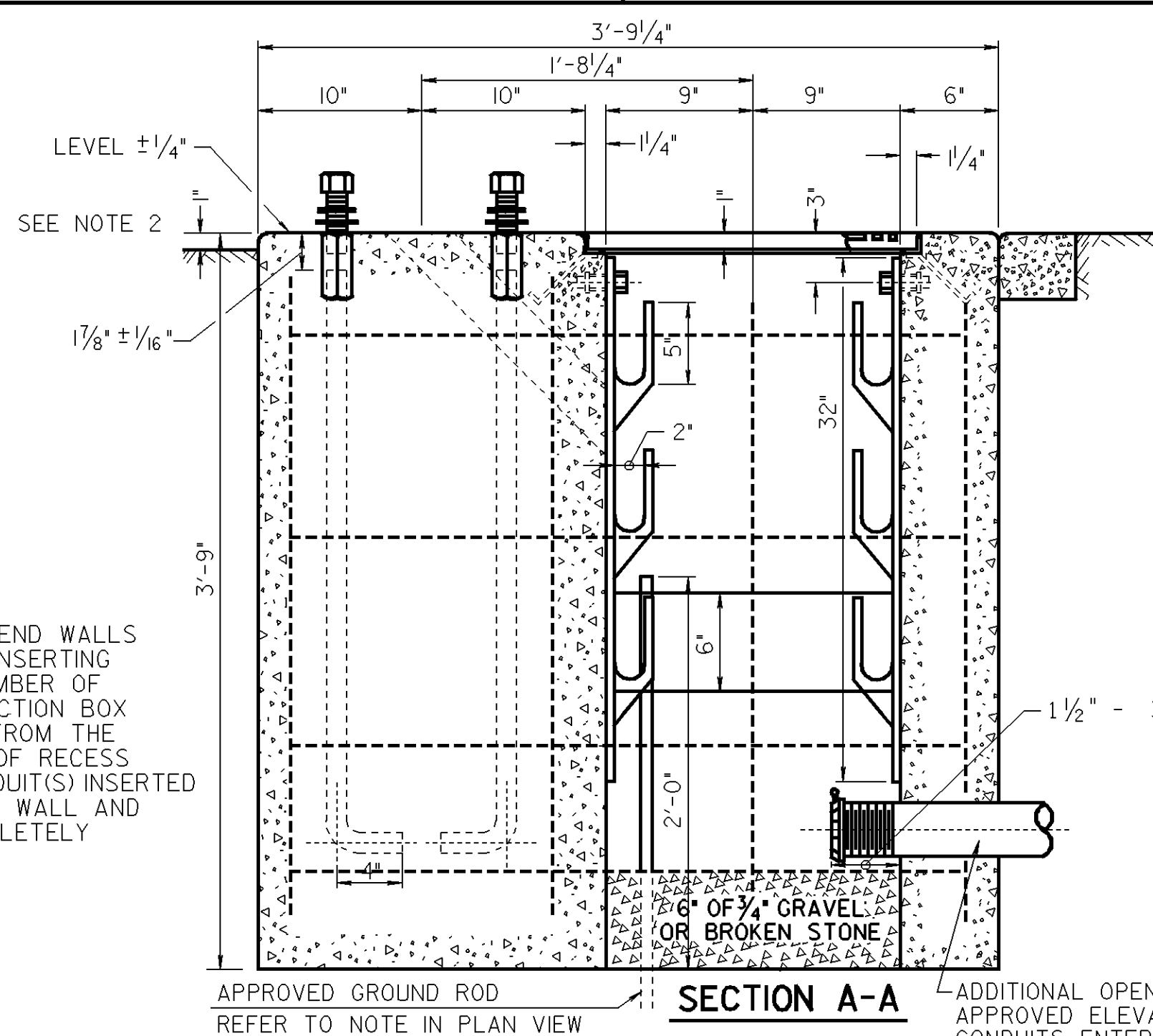
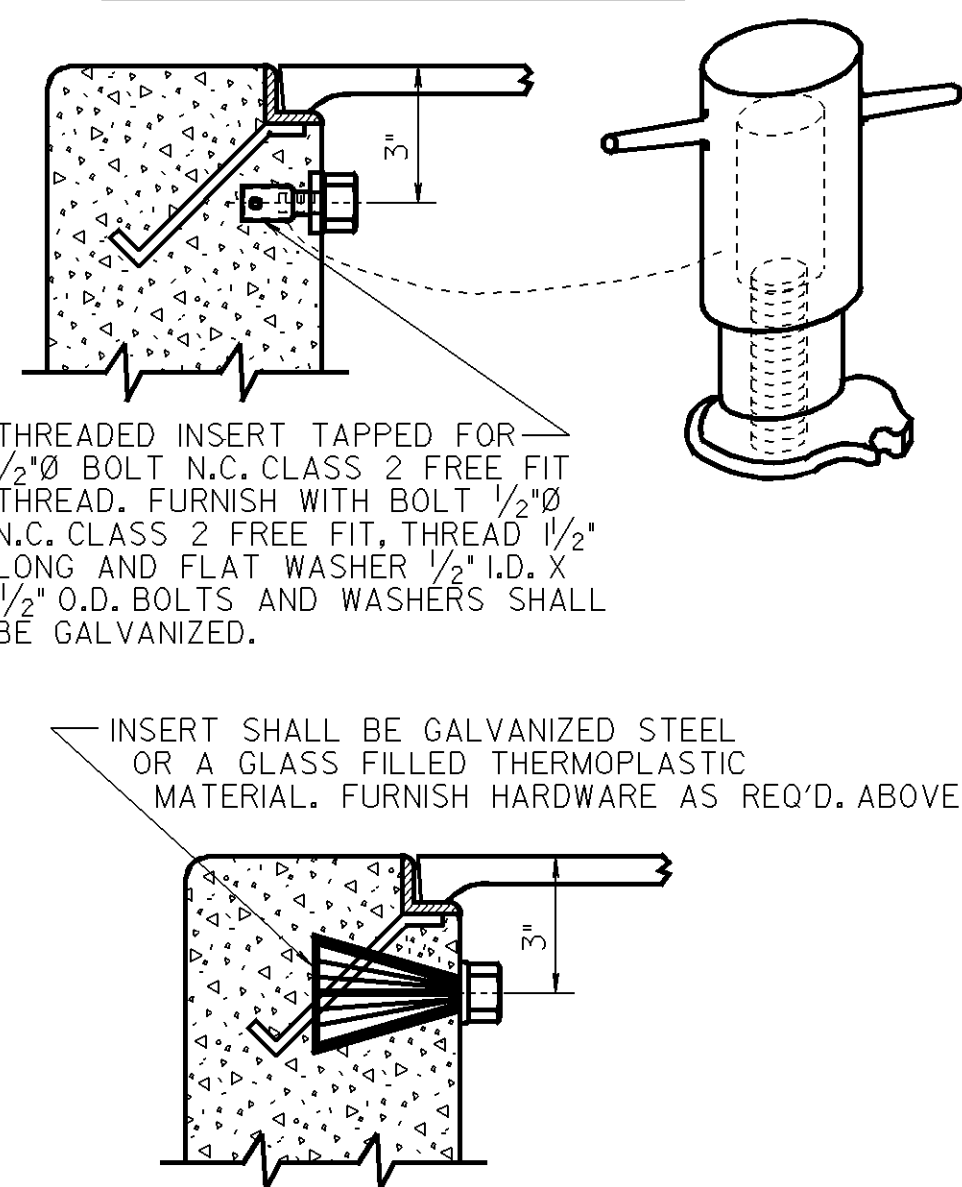


NOTES:

- 1.) JUNCTION BOX FOUNDATION SHALL BE SET PARALLEL TO THE CURB AND TOP OF JUNCTION BOX SHALL BE SET AT GRADE IN SIDEWALK OR PAVED AREA. ENGINEER MAY REQUIRE TOP OF JUNCTION BOX TO BE INCLINED IN ORDER TO CONFORM WITH FIELD CONDITIONS. JUNCTION BOX SHALL BE SET AT FINISH GRADE.
- 2.) JUNCTION BOX FOUNDATION CONSTRUCTED IN DIRT OR GRASS AREAS SHALL MEET THE CRITERIA AS PER DETAIL "A".
- 3.) CABLE RACKS FURNISHED AND INSTALLED AS INDICATED.
- 4.) BONDING AND GROUNDING INSULATED BUSHINGS SHALL BE INSTALLED ON CONDUITS TERMINATING IN JUNCTION BOXES AND/OR FOUNDATIONS AND SHALL HAVE A FITTING TO PREVENT ENTRY OF FOREIGN MATTER PRIOR TO INSTALLATION OF WIRING.
- 5.) A NYLON CORD, 125 POUND MINIMUM TEST STRENGTH, SHALL BE FURNISHED AND INSTALLED IN ALL CONDUITS. SEE SPECIFICATIONS.
- 6.) CONDUITS SHALL ENTER JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE ENGINEER. A 2' SEPARATION SHALL BE MAINTAINED BETWEEN ADJACENT WALLS, CONDUITS, AND CABLE RACK LOCATIONS.
- 7.) ALL NON-METALLIC CONDUITS SHALL TERMINATE WITH BELL END CONSTRUCTION IN JUNCTION BOX.
- 8.) ALL UNUSED CONDUITS SHALL BE PLUGGED OR CAPPED.
- 9.) TERMINAL ENDS OF ALL METALLIC CONDUIT SHALL BE THREADED.
- 10.) IF JUNCTION BOX FOUNDATION IS INSTALLED ON PROJECT WITHOUT LIGHTING STANDARDS, 1" MINIMUM LONG BOLTS SHALL BE INSTALLED WITH GREASE.
- 11.) IF CURB IS NOT CONSTRUCTED AND COLORED BITUMINOUS STONE SURFACE TREATMENT IS UTILIZED BEHIND SHOULDER AREA, ENTIRE JUNCTION BOX FOUNDATION SHALL BE ROTATED 180 DEGREES FROM ABOVE SKETCH WITH FOUNDATION PORTION BEHIND GUIDE RAIL.



CABLE RACK SUPPORTS



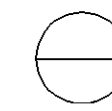
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

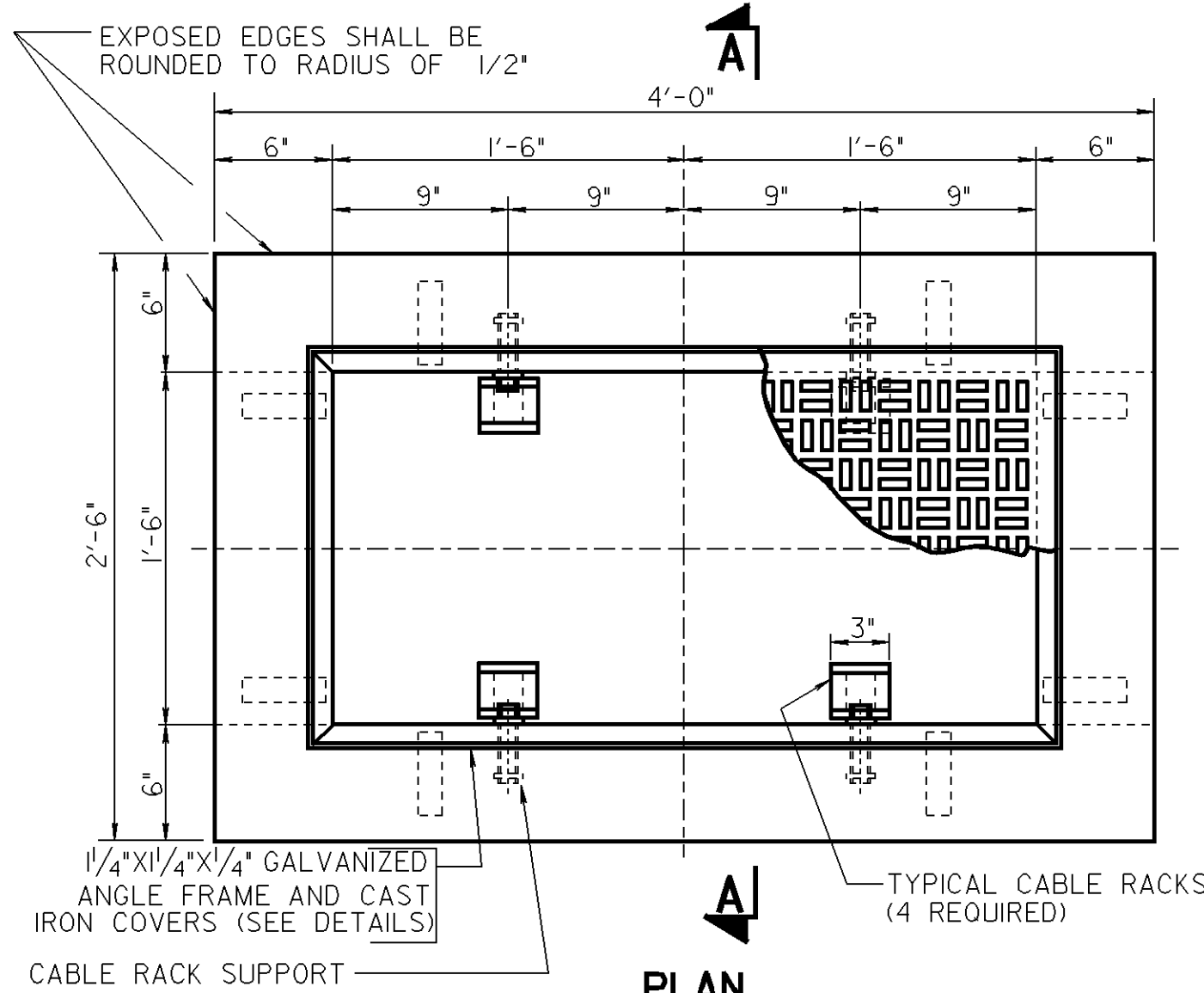
N.T.S.

JUNCTION BOX FOUNDATION "JBF",
CAST IN PLACE TYPE

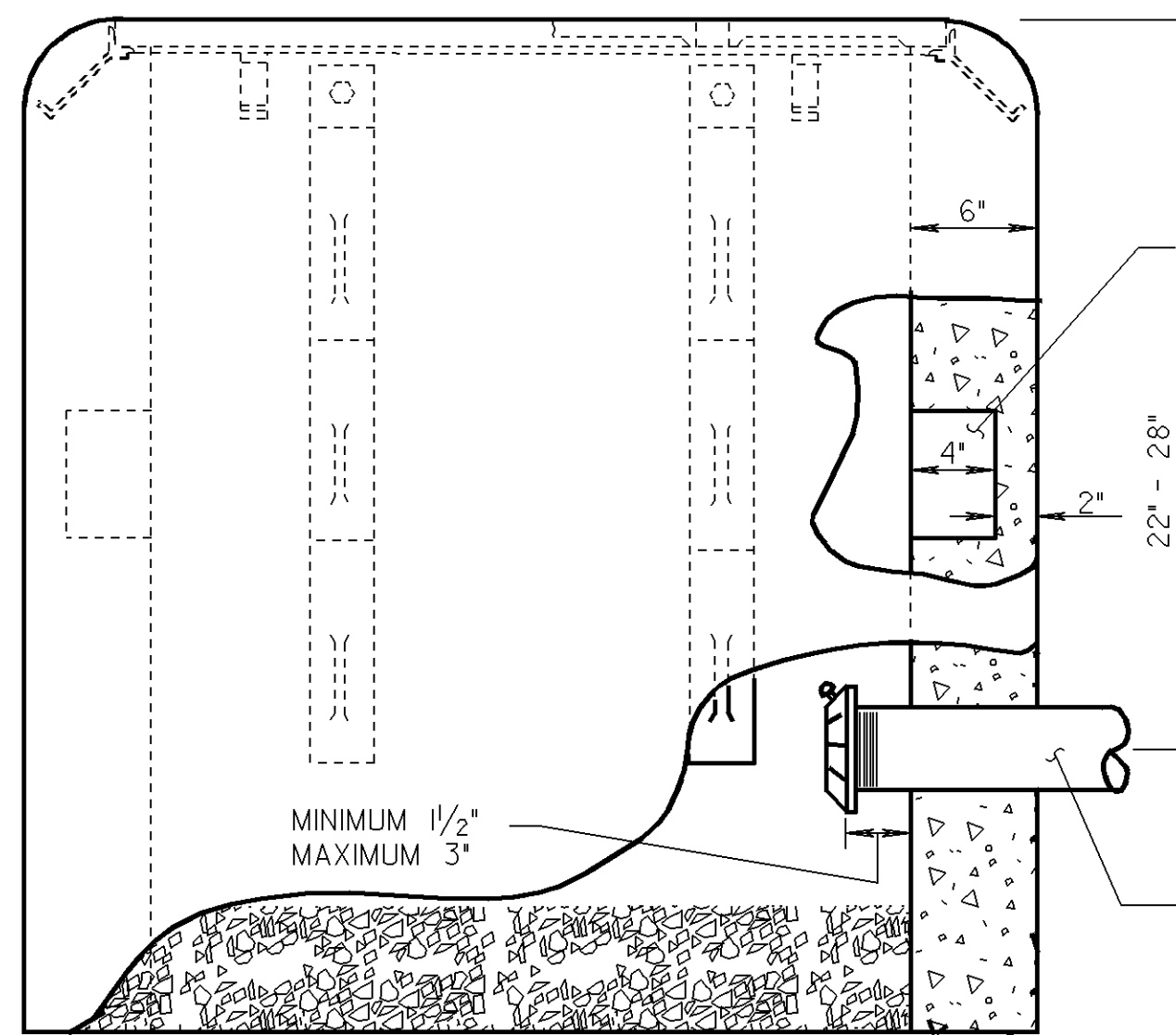
L-040I





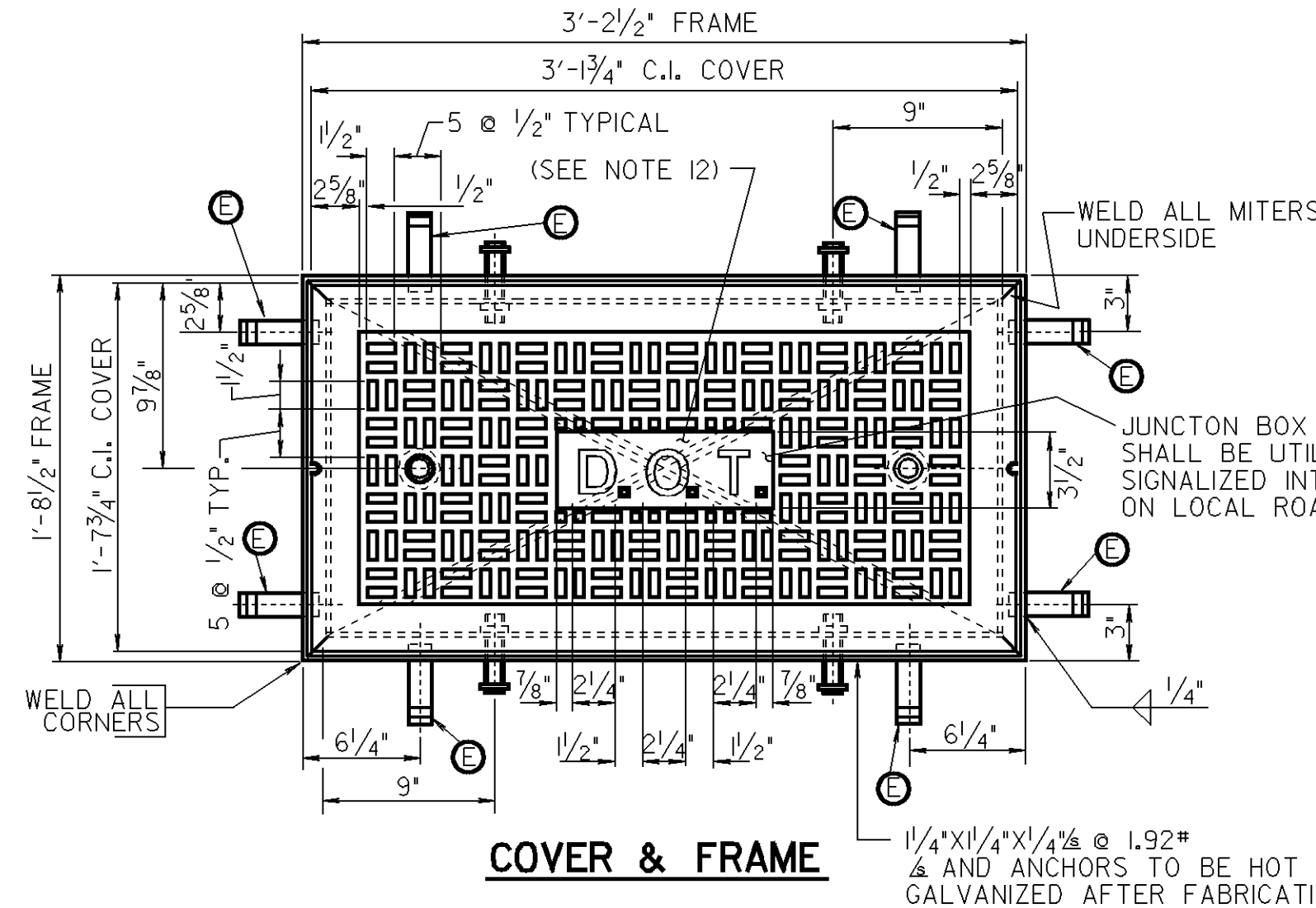


18' X 36' JUNCTION BOX - CLASS 'JB'
CONCRETE CLASS 'C'
USING APPROVED 3/4" AGGREGATE
0.8 CU. YD.

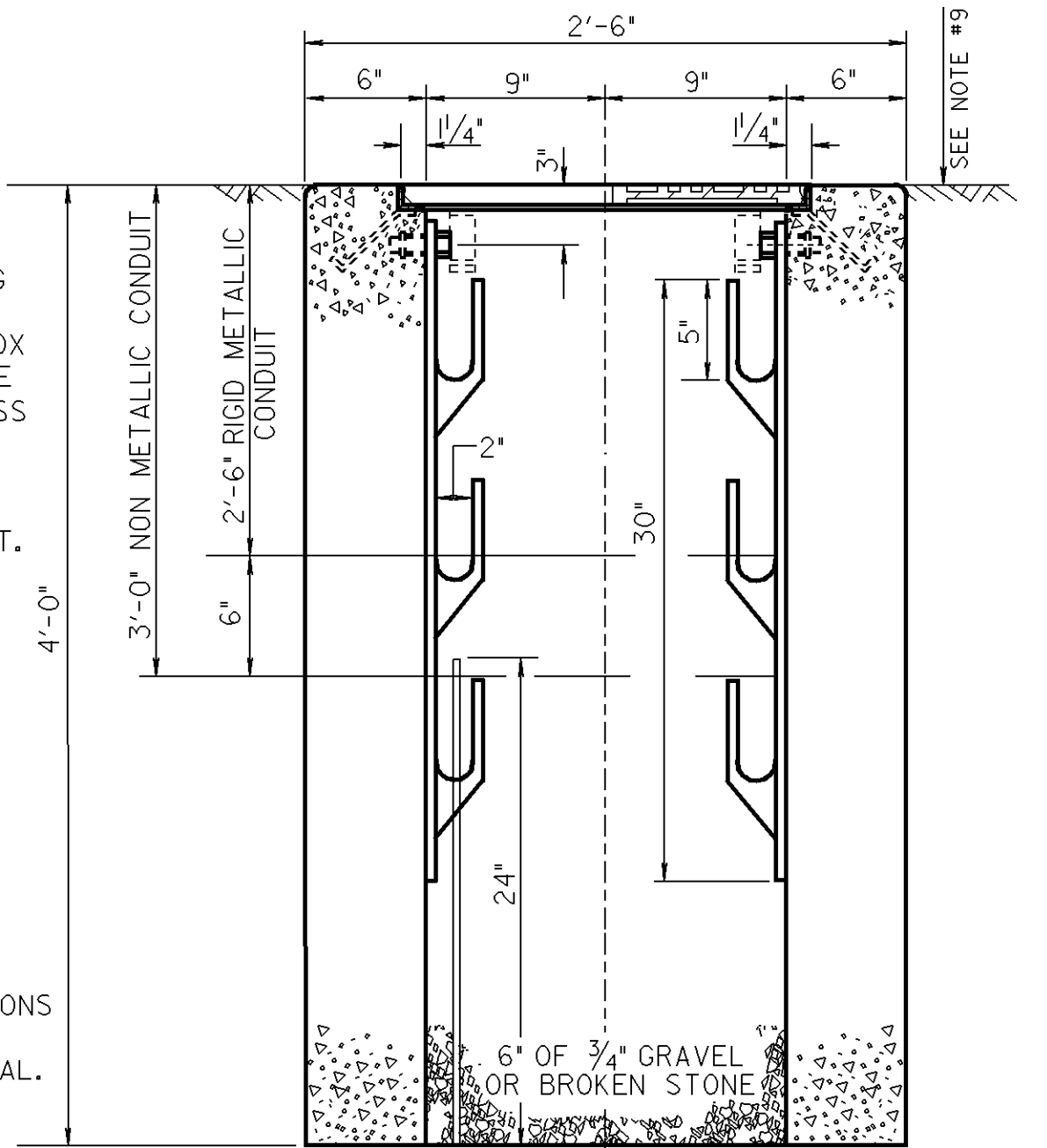


ELEVATION

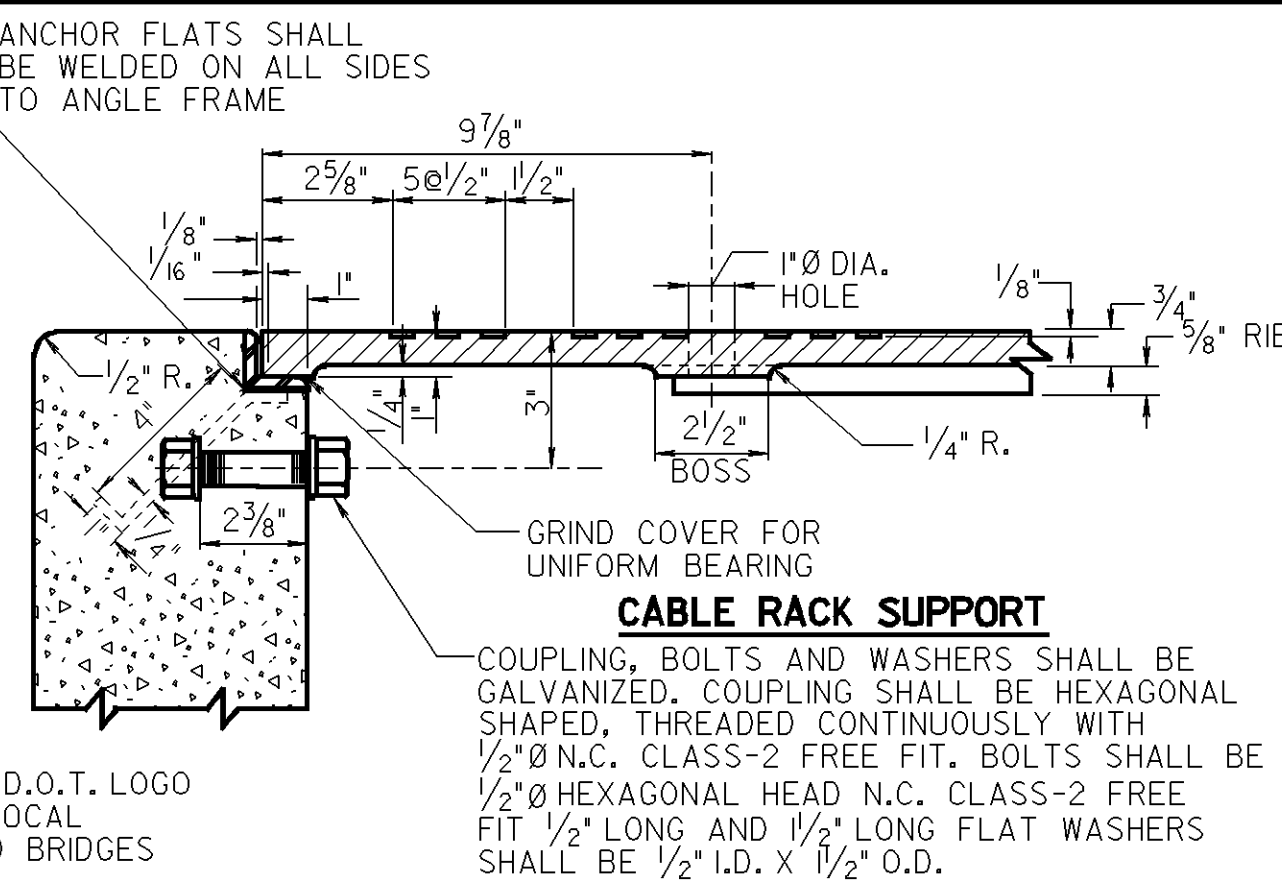
NOTES
 MINIMUM WEIGHT OF FRAME = 16 LBS.
 MINIMUM WEIGHT OF C.I. COVER = 150 LBS.
 FRAME AND ANCHORS OF STRUCTURAL STEEL.
 (E) - DENOTES 1" X 1/4" X 6" STL. ANCHORS (8 REQUIRED)



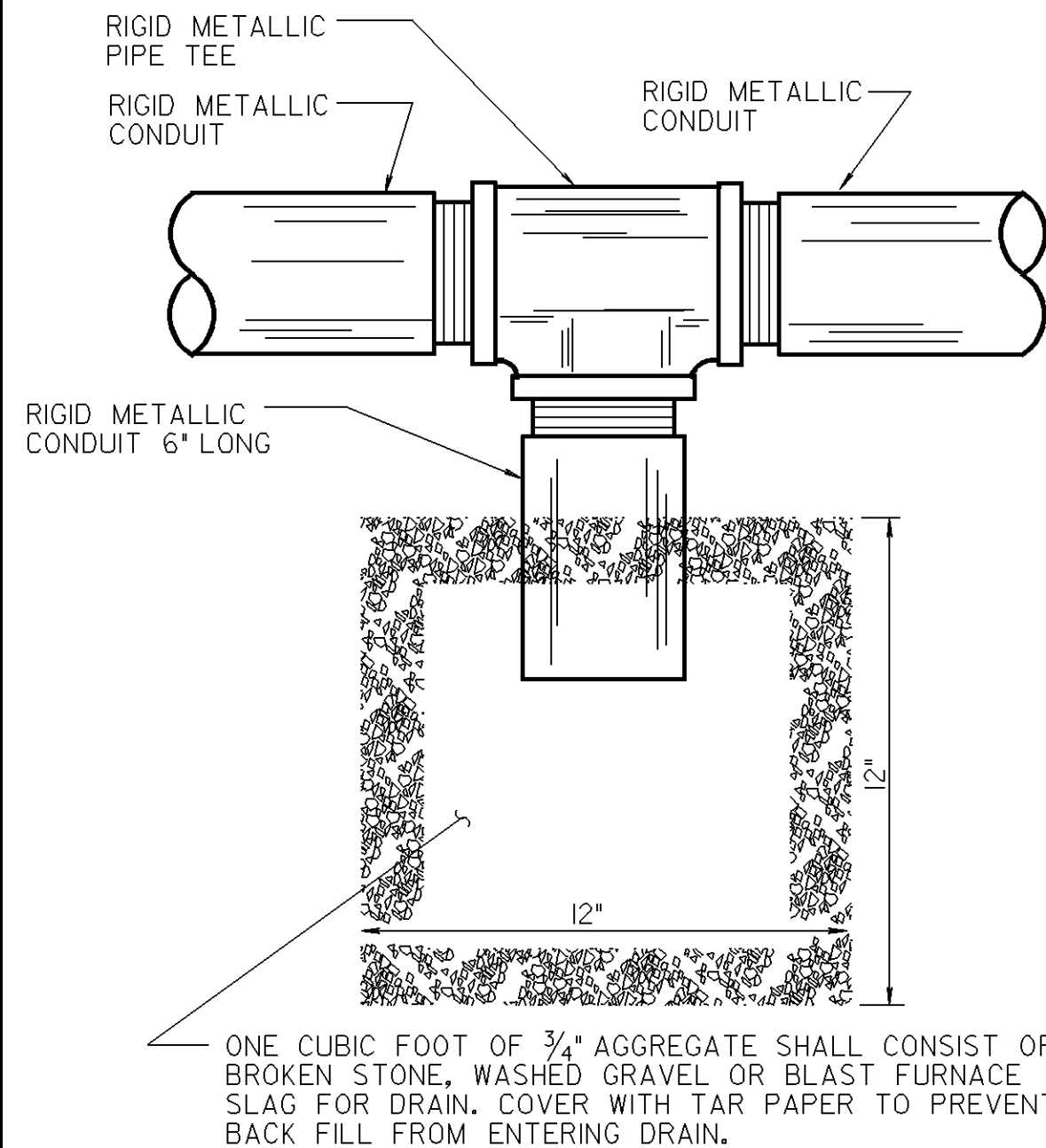
COVER & FRAME



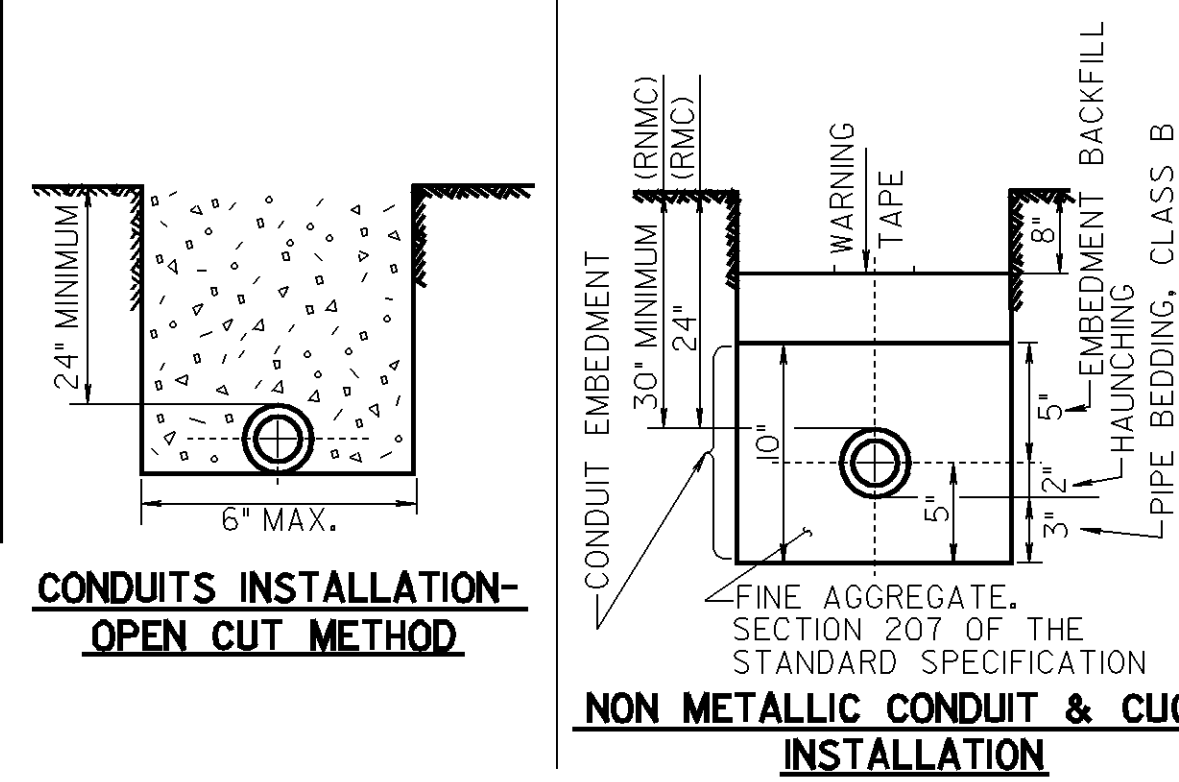
SECTION A-A



SECTION THRU JUNCTION BOX



TYPICAL TEE DRAIN



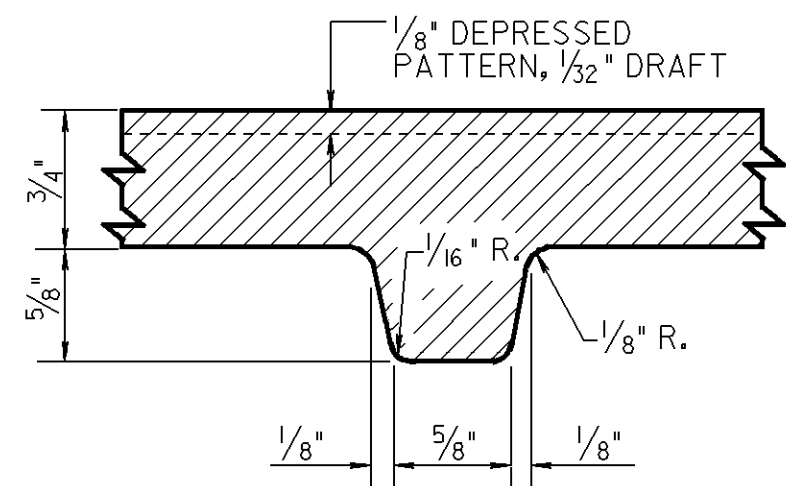
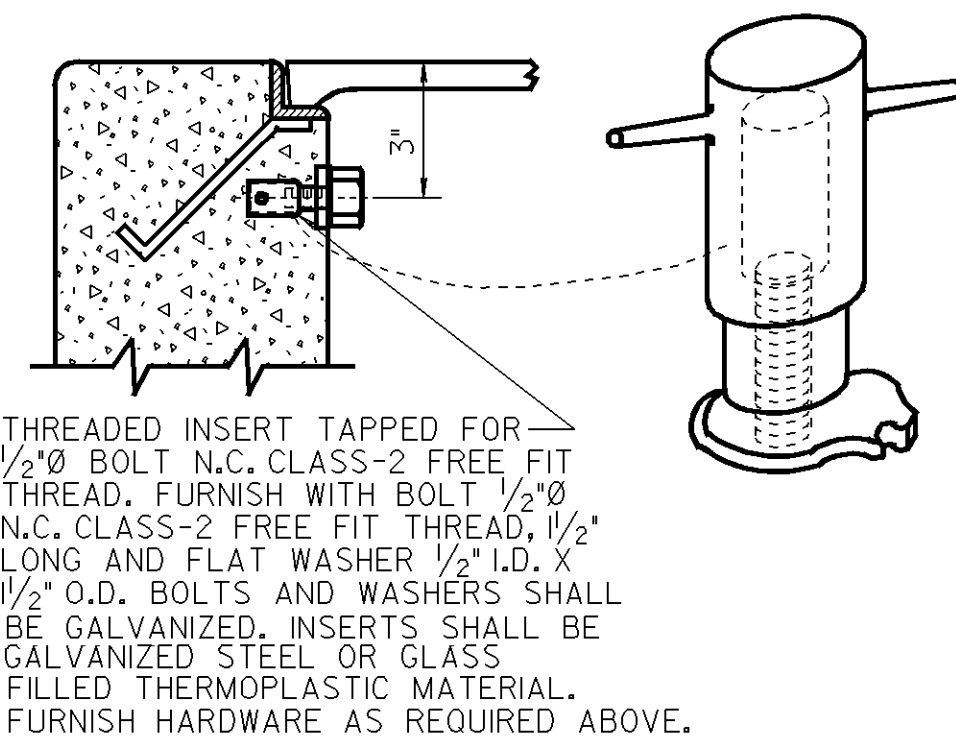
CONDUITS INSTALLATION-OPEN CUT METHOD

TYPICAL CONDUIT INSTALLATION

WARNING TAPE
CAUTION CAUTION CAUTION
 ELECTRIC LINE BURIED BELOW 6" TYP.

BLACK LETTERS ON RED BACKGROUND

ALTERNATE CABLE RACK SUPPORT



SECTION OF RIB

NOTES:

- 1.) JUNCTION BOX FOUNDATION SHALL BE SET PARALLEL TO THE CURB AND TOP OF JUNCTION BOX SHALL BE SET AT GRADE IN SIDEWALK, PAVED AREA, IN GRASS OR DIRT AREAS.
- 2.) CABLE RACKS FURNISHED AND INSTALLED AS INDICATED.
- 3.) BONDING AND GROUNDING INSULATED BUSHINGS SHALL BE INSTALLED ON METALLIC CONDUITS TERMINATING IN JUNCTION BOXES AND/OR FOUNDATIONS AND SHALL HAVE A FITTING TO PREVENT ENTRY OF FOREIGN MATTER PRIOR TO INSTALLATION OF WIRING.
- 4.) A NYLON CORD, 125 POUND MINIMUM TEST STRENGTH, SHALL BE FURNISHED AND INSTALLED IN ALL CONDUITS. SEE SPECIFICATIONS.
- 5.) CONDUITS SHALL ENTER JUNCTION BOX PERPENDICULAR TO WALLS OR AS APPROVED BY THE ENGINEER. A 2" SEPARATION SHALL BE MAINTAINED BETWEEN ADJACENT WALLS, CONDUITS, AND CABLE RACK LOCATIONS.
- 6.) TERMINAL ENDS OF ALL METALLIC CONDUIT SHALL BE THREADED.
- 7.) ALL NON-METALLIC CONDUITS SHALL TERMINATE WITH BELL END CONSTRUCTION IN JUNCTION BOX.
- 8.) ALL UNUSED CONDUITS SHALL BE PLUGGED OR CAPPED.
- 9.) ENGINEER MAY REQUIRE TOP OF JUNCTION BOX TO BE INCLINED IN ORDER TO CONFORM WITH FIELD CONDITIONS. JUNCTION BOX SHALL BE SET TO GRADE IN SIDEWALK AREA AND IN ALL OTHER AREAS.
- 10.) WARNING TAPE SHALL BE A RED 4 MIL. FLEXIBLE POLYETHYLENE FILM WHICH IS RESISTANT TO ACIDS, BASES, HYDROCARBONS AND WATER.
- 11.) IN INCLINE AREA, NO PART OF THE JUNCTION BOX SHALL EXTEND MORE THAN 4" ABOVE THE FINISH GRADE.
- 12.) JUNCTION BOX COVER WITHOUT D.O.T. LOGO SHALL BE UTILIZED FOR ALL LOCAL SIGNALIZED INTERSECTIONS AND BRIDGES ON LOCAL ROADS.

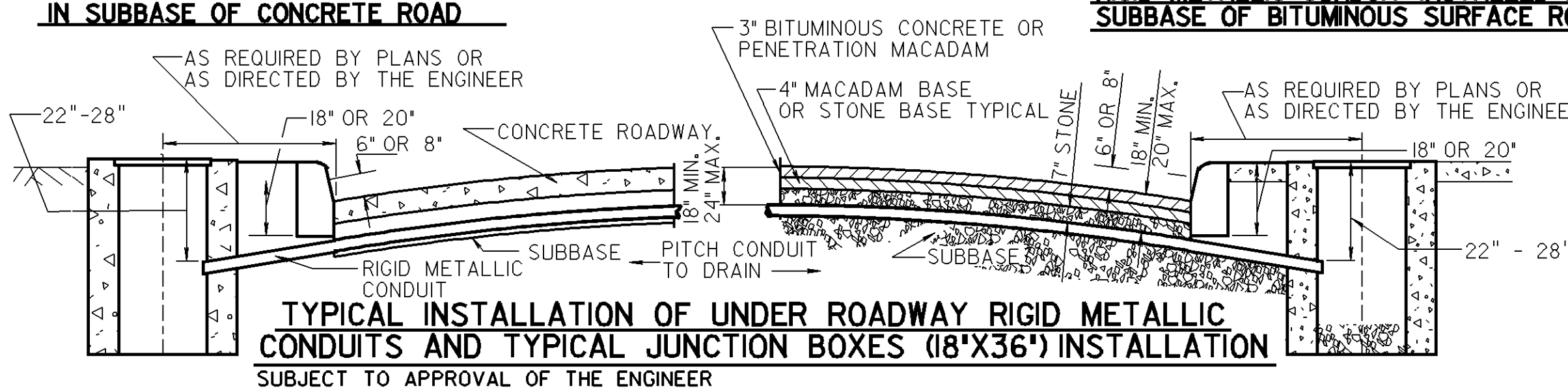
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

N.T.S.

18' X 36' JUNCTION BOX CAST IN PLACE TYPE
 TYPICAL INSTALLATION OF JUNCTION BOX
 & UNDER ROADWAY CONDUIT

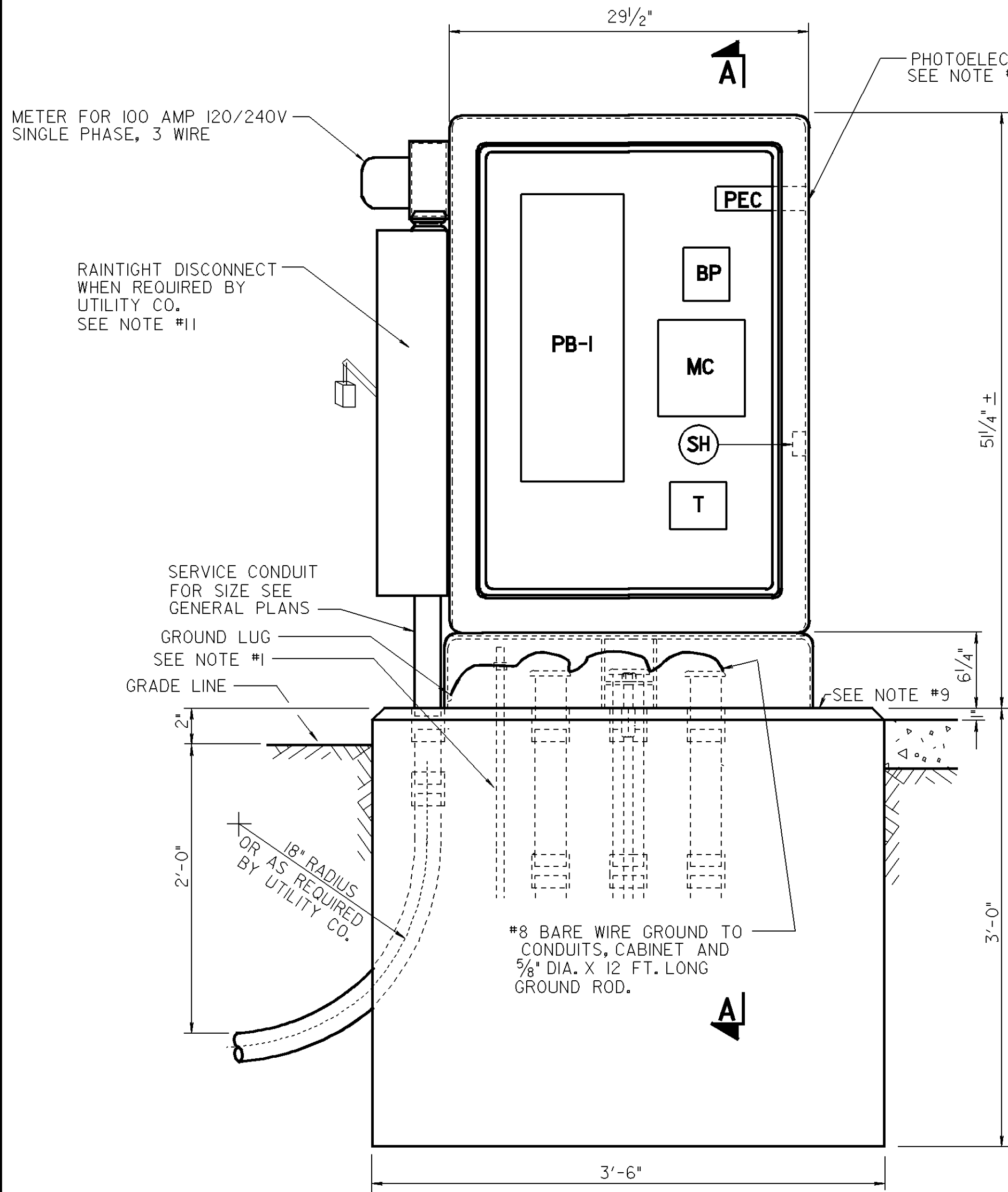
RIGID METALLIC CONDUIT INSTALLED IN SUBBASE OF CONCRETE ROAD



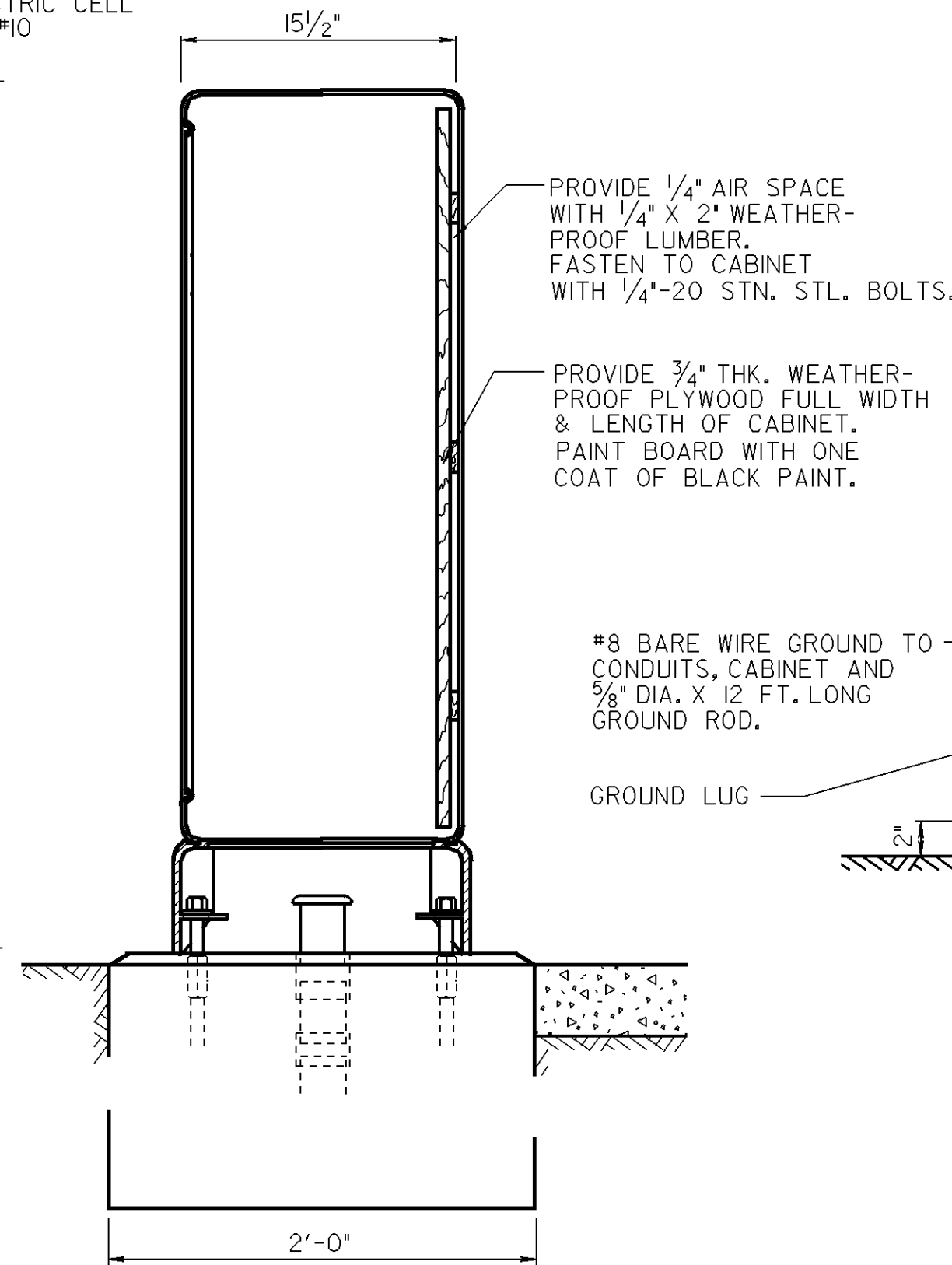
TYPICAL INSTALLATION OF UNDER ROADWAY RIGID METALLIC CONDUITS AND TYPICAL JUNCTION BOXES (18'X36') INSTALLATION
 SUBJECT TO APPROVAL OF THE ENGINEER

RIGID METALLIC CONDUIT INSTALLED IN SUBBASE OF BITUMINOUS SURFACE ROAD

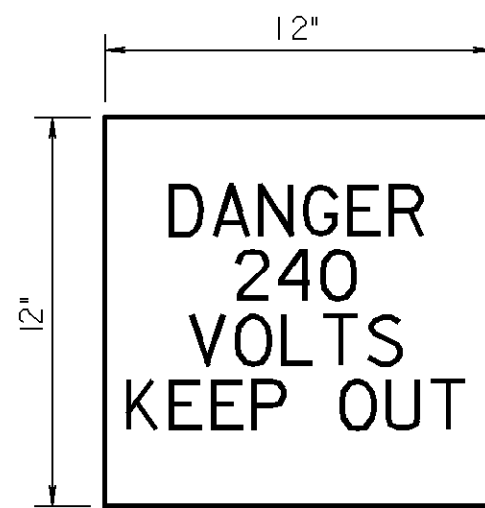
REFERENCE



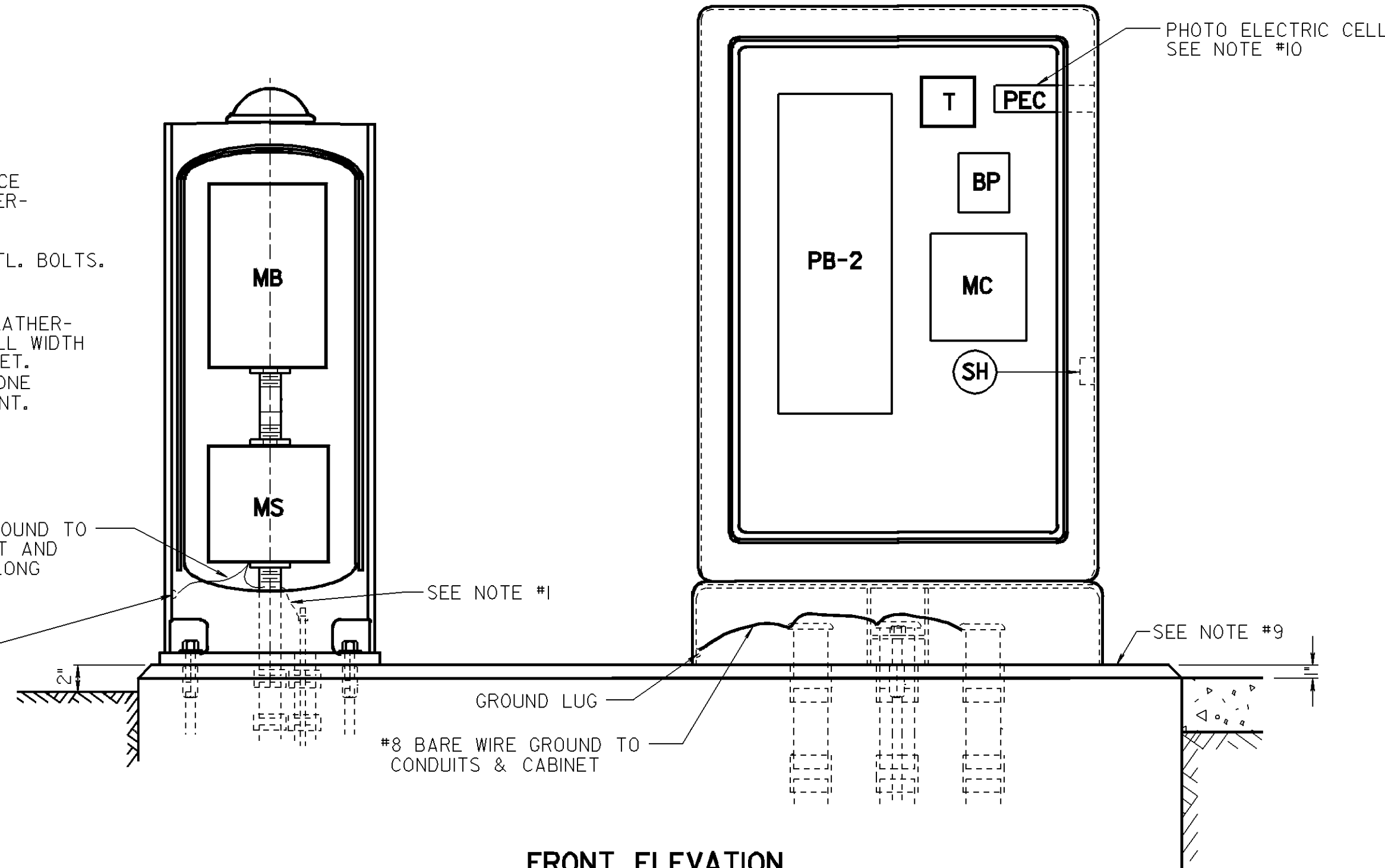
FRONT ELEVATION
METER CABINET TYPE IM



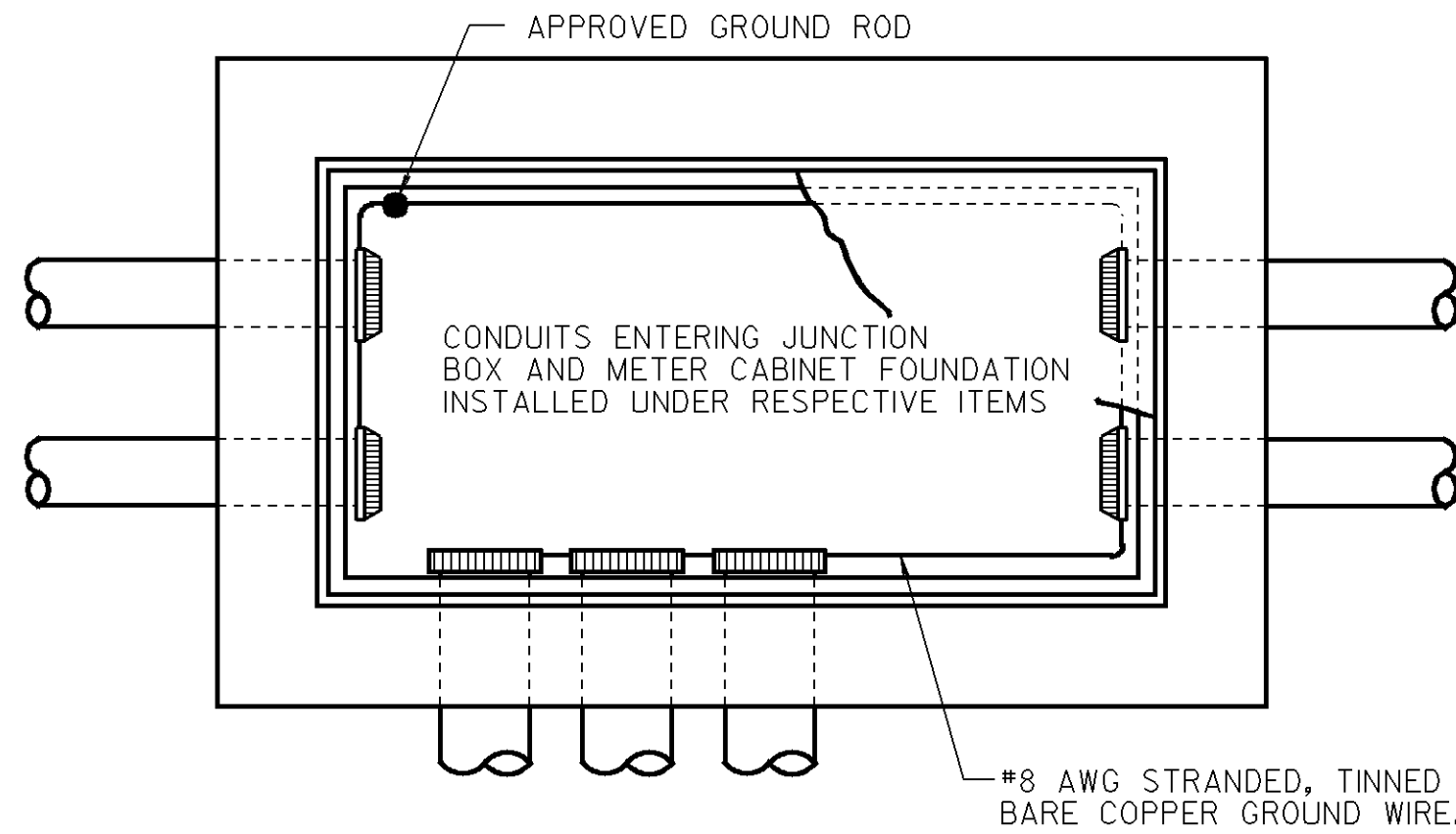
SECTION A-A



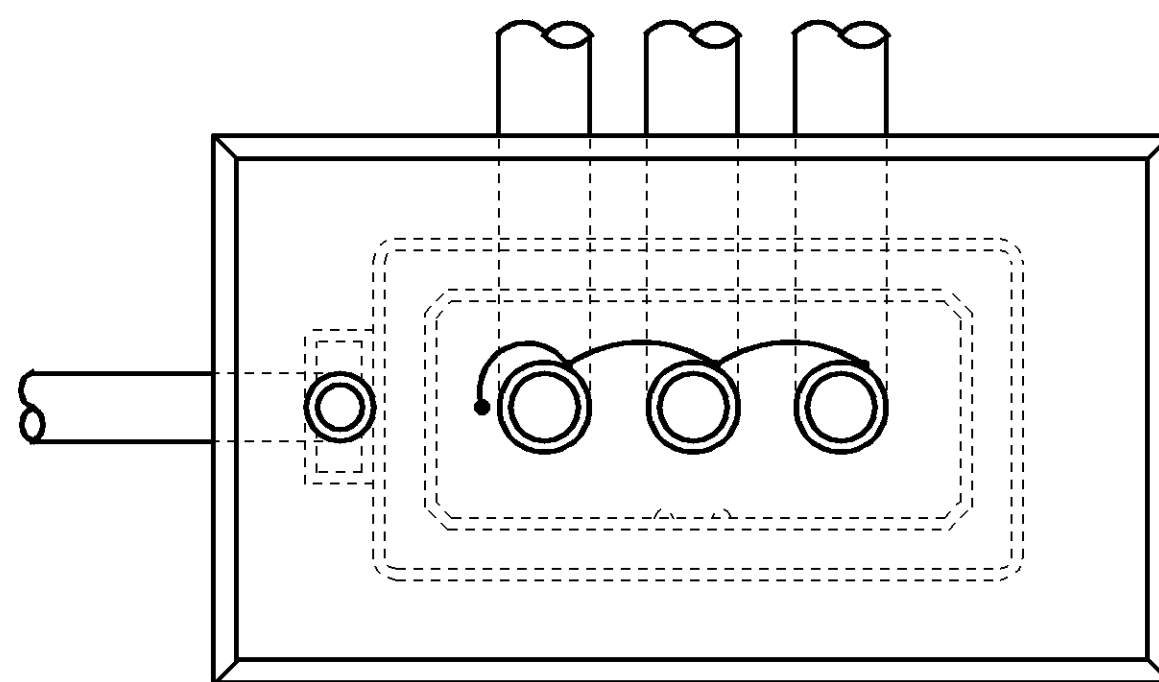
ENAMELED METAL SIGN TO BE
INSTALLED ON DOOR OF EACH
LOAD CENTER CABINET
WHITE WITH RED LETTERS.



FRONT ELEVATION
METER CABINET TYPE IM-MC



PLAN-JUNCTION BOX



PLAN-METER CABINET FOUNDATION

NOTES:

1. 5/8" DIA. X 12' LONG GROUND ROD.
2. CABINETS TYPES M AND MC-CAST ALUMINUM CABINET FURNISHED WITH DOOR AND LOCK FABRICATED IN ACCORDANCE WITH THE STANDARD DETAILED DRAWING.
3. LOCATION OF METER CABINET FOUNDATION, SIZE, NUMBER AND DIRECTION OF CONDUIT RUNS SHALL BE TAKEN FROM THE GENERAL ELECTRICAL PLANS FOR THE AREA WHERE REQUIRED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.
4. GROUNDING FACILITIES SHALL BE INSTALLED IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS AND N.E.C.
5. TERMINATE ALL CONDUITS WHEN ENTERING ENCLOSURES WITH LOCKNUT AND BONDING BUSHINGS. ALL OTHER CONDUITS SHALL BE PROVIDED WITH BONDING BUSHINGS. ALL CONDUITS TO BE BONDED WITH #8AWG STRANDED BARE COPPER GROUND WIRE.
6. ALL CIRCUIT BREAKERS TO BE PLUG-IN TYPE, SHALL MEET FEDERAL SPECIFICATION W-C-375B AS A CLASS 10a OR 10b BREAKER.
7. LOAD CENTERS SHALL BEAR UNDERWRITERS LABORATORIES LABEL.
8. WIRES IN CABINET SHALL BE ARRANGED IN A WORKMAN LIKE MANNER USING WAXED SERVING CORD OR NYLON SELF CLINCHING STRAPS OR APPROVED EQUAL.
9. FOR METER CABINET FOUNDATION DETAILS SEE DWG. #L-03.
10. PHOTOELECTRIC CONTROL TO BE MOUNTED INSIDE CABINET. HOLE IN CABINET FOR PHOTOCELL SHALL BE 3" X 3" MIN. AND SHALL BE COVERED WITH CLEAR PLEXIGLASS AND GASKETED. PHOTOELECTRIC CONTROL SHALL BE MOUNTED WITH THE PHOTOCELL FACING NORTH. PHOTOCELL MAY BE REPOSITIONED TO AVOID BEING AFFECTED BY ARTIFICIAL LIGHTING.
11. SERVICE DISCONNECT SWITCH - 240 VOLT, 100 AMP., S/N, NEMA 3R ENCLOSURE WITH PADLOCK PROVISIONS. (LOCK TO BE SUPPLIED BY UTILITY COMPANY).
12. SEE GENERAL PLANS FOR SERVICE AND CIRCUIT WIRE SIZE.
13. CONTROL CIRCUIT WIRING SHALL BE NO. 10AWG MIN. NO. 12 AWG TYPE TFE HIGH TEMP. WIRE SHALL BE USED TO CONNECT THE THERMOSTAT AND HEATING ELEMENT.
14. FOR ALTERNATE FABRICATED ALUMINUM TYPES M AND MC CABINETS SEE DRAWING P-20 AND P-07 AVAILABLE UPON REQUEST.
15. CONTRACTOR SHALL PROVIDE SCALE DRAWING TO VERIFY THAT PROPOSED COMPONENTS WILL FIT IN CABINET.

METER CABINET TYPE IM OR IM-MC - 120/240V		
SYMBOL	APPARATUS DESCRIPTION	RATING
MB	MAIN BREAKER 2 POLE 240 VOLT S/N NEMA TYPE 1 ENCLOSURE	AMP
PEC	PHOTOELECTRIC CELL 240 VOLTS-3 KVA	N.A.
BP	TOGGLE SWITCH (BY-PASS) SINGLE POLE 10 AMP, 277 VOLT WITH ENCLOSURE	N.A.
MC	MAGNETIC CONTACTOR, 2 POLE 1 PHASE, NEMA SIZE 1 240 VOLT WITH 120 VOLT OPERATING COIL	AMP
SH	STRIP HEATER, 400 WATT, 240 VOLT, WITH STAINLESS STEEL OR CHROME STEEL SHEATH MOUNTED ON PORCELAIN STAND-OFF	N.A.
T	THERMOSTAT LINE VOLTAGE-OPERATING RANGE 50°F. TO 70°F. 240V RATING 2,000 WATTS SINGLE POLE.	N.A.
PB-1	PANELBOARD-SPLIT BUSS-8 CIRCUITS TOP SECTION MIN. 12 CIRCUITS BOTTOM-125 AMP RATED MAINS LIGHTING BREAKERS 15 AMP.	LIGHTING BREAKERS AMP. MAIN BREAKER AMP.
PB-2	PANELBOARD-MIN. 16 CIRCUITS-125 AMP RATED MAINS LIGHTING BREAKERS 15 AMP. CONTROL AND HEATER BREAKERS 15 AMP.	LIGHTING BREAKERS AMP. CONTROL & HEATER BREAKERS AMP.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

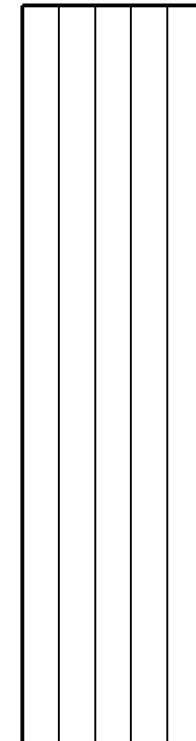
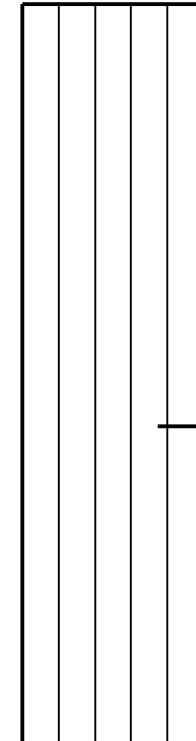
ELECTRICAL DETAILS

N.T.S.

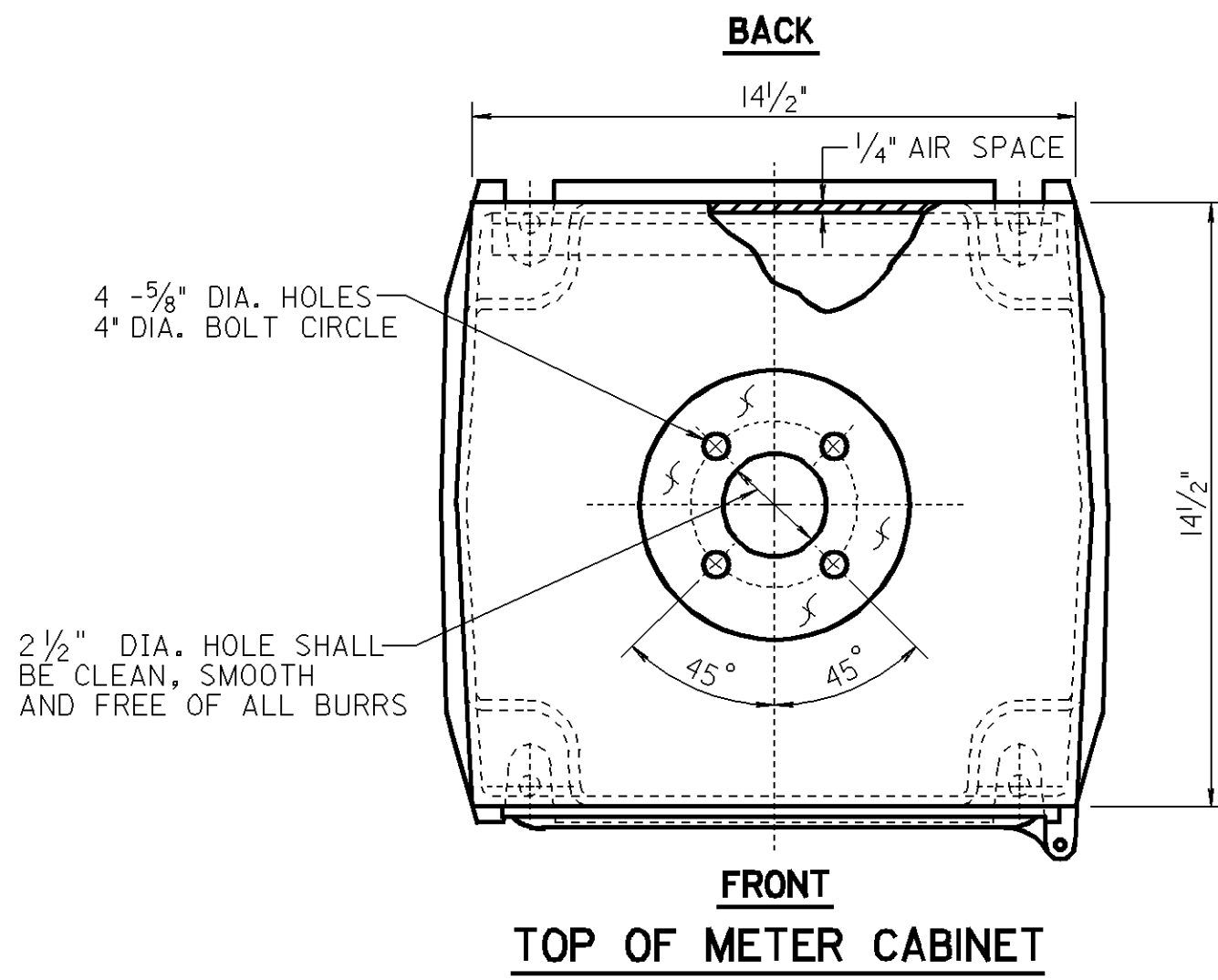
METER CABINET, TYPE IM, 120/240 VOLT
AND TYPE IM-MC, 120/240 VOLT

L-0701

REFERENCE



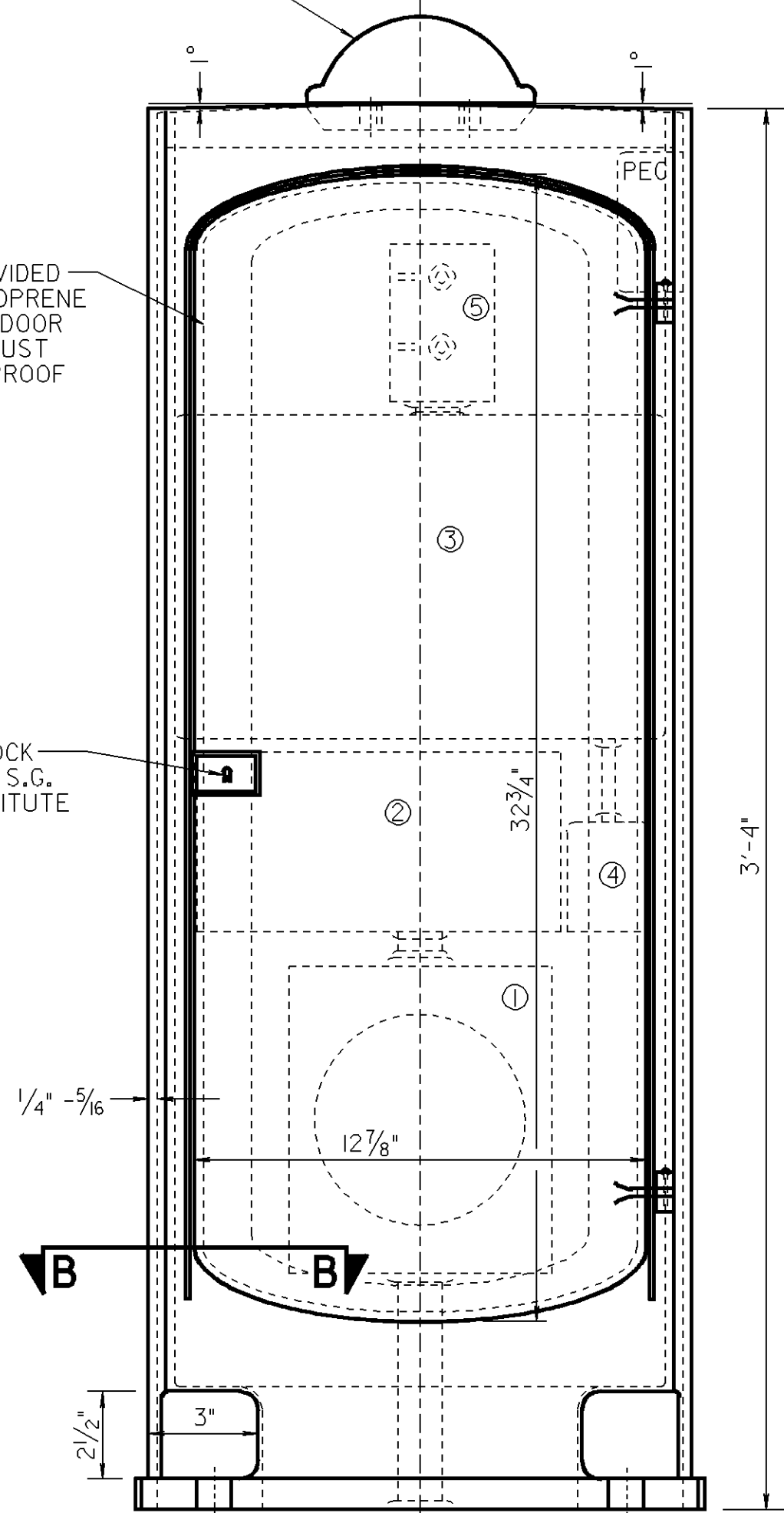
BDC 000-002 - ORIGINAL SHEET



PROVIDE APPROVED WATERTIGHT
COVER (SEE DETAIL OF METER
CABINET CAP.)

DOOR SHALL BE PROVIDED
WITH CONTINUOUS NEOPRENE
GASKET SECURED IN DOOR
GROOVE TO INSURE DUST
TIGHT AND WEATHERPROOF
PROTECTION.

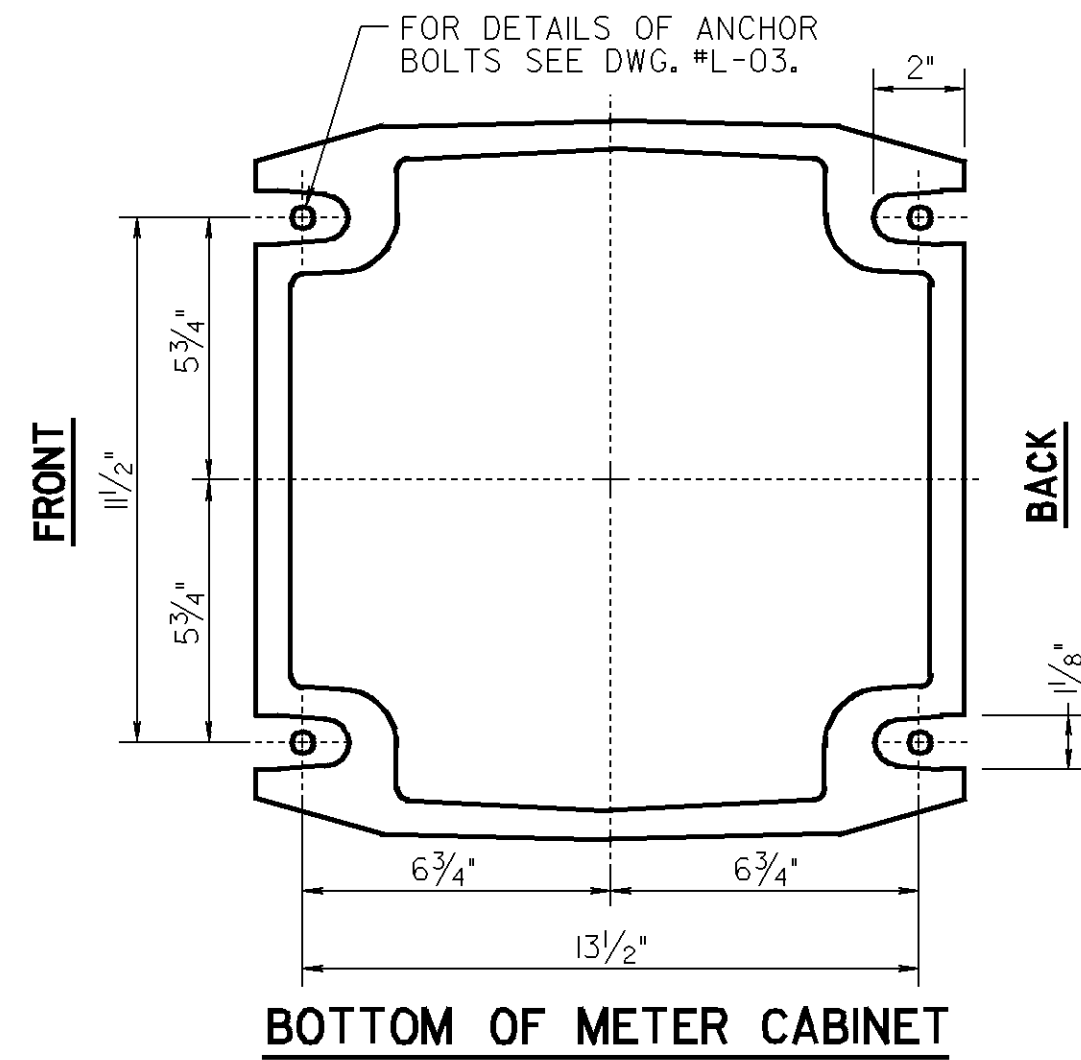
CORBIN LOCK
NO. 0357 S.G.
NO SUBSTITUTE



FRONT ELEVATION

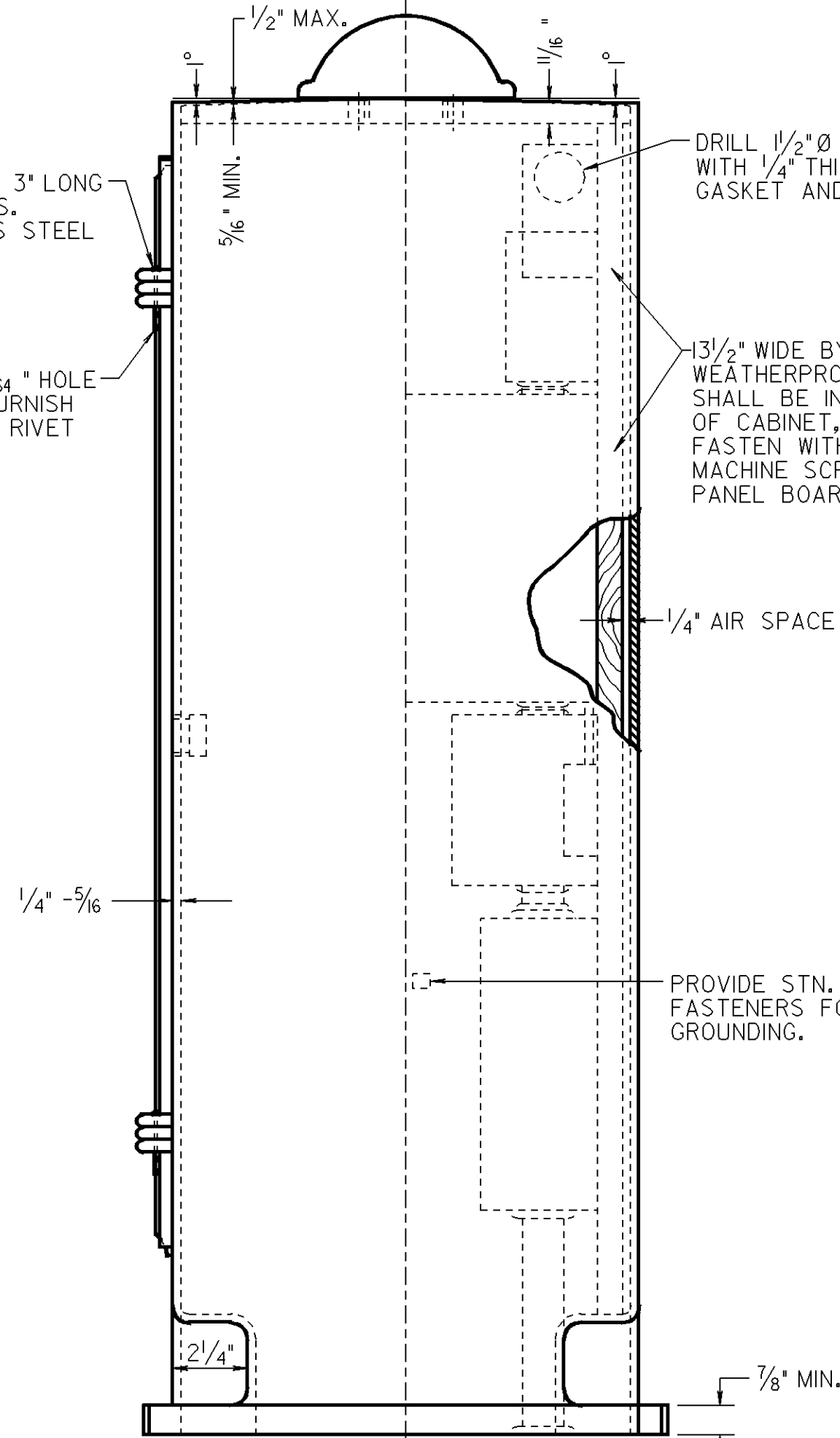
METER CABINET DETAIL

- ALUMINUM ALLOY, COMMERCIAL DESIGNATION 356
A.S.T.M. DESIGNATION B26-56T, ALLOY SG 70A.
- THE CABINET SHALL BE FREE OF BURRS, SHARP EDGES,
DENTS, PINHOLES, AND PARTING LINES AND SHALL HAVE
A UNIFORM #30 GRIT FINISH.
- FOR ALTERNATE FABRICATED METER CABINET SEE DWG. T-35.

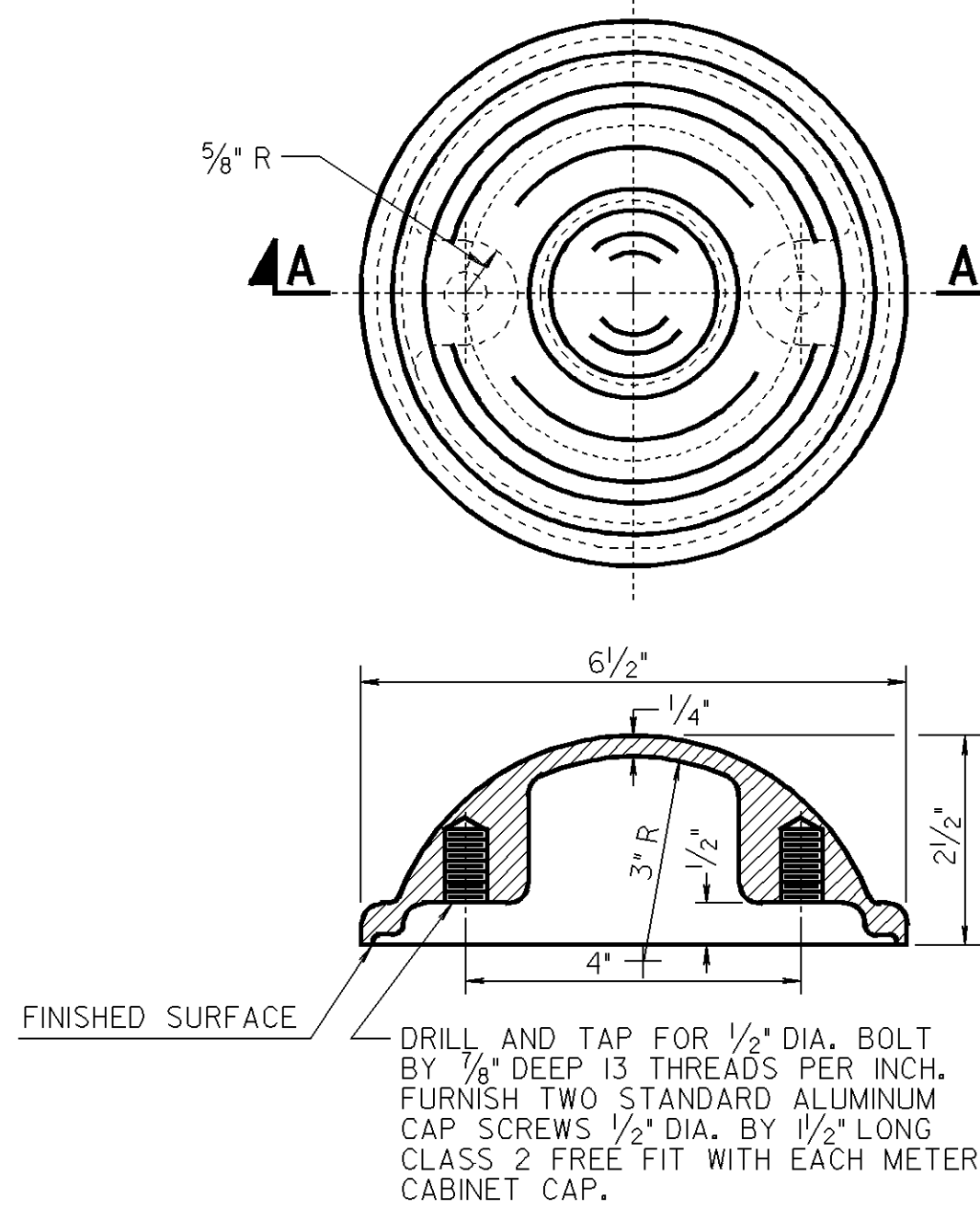


1/4" DIA. X 3" LONG
HINGE PINS,
STAINLESS STEEL

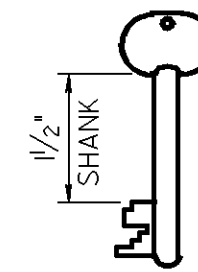
DRILL 5/16" HOLE
AND FURNISH
BRASS RIVET



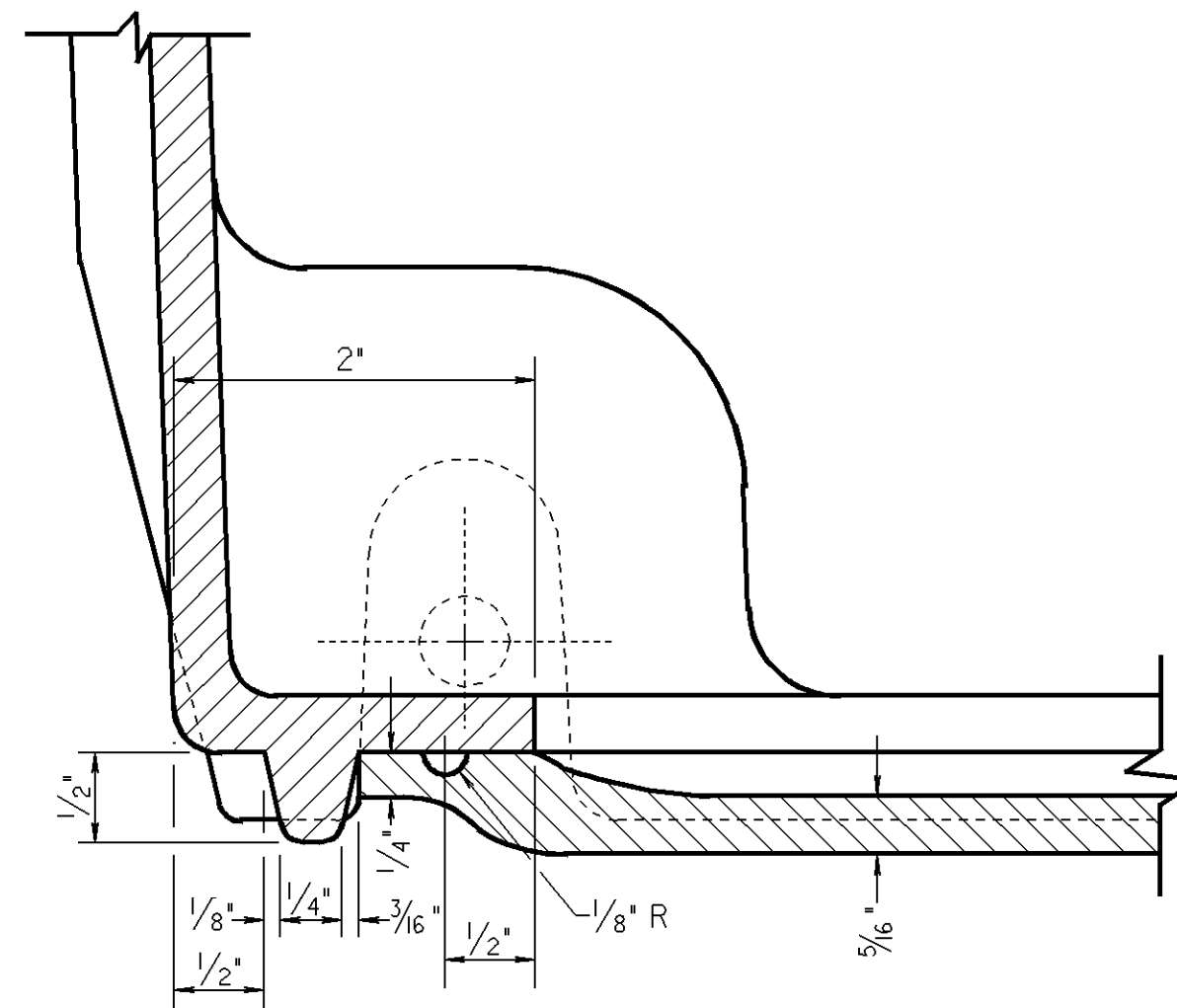
SIDE ELEVATION



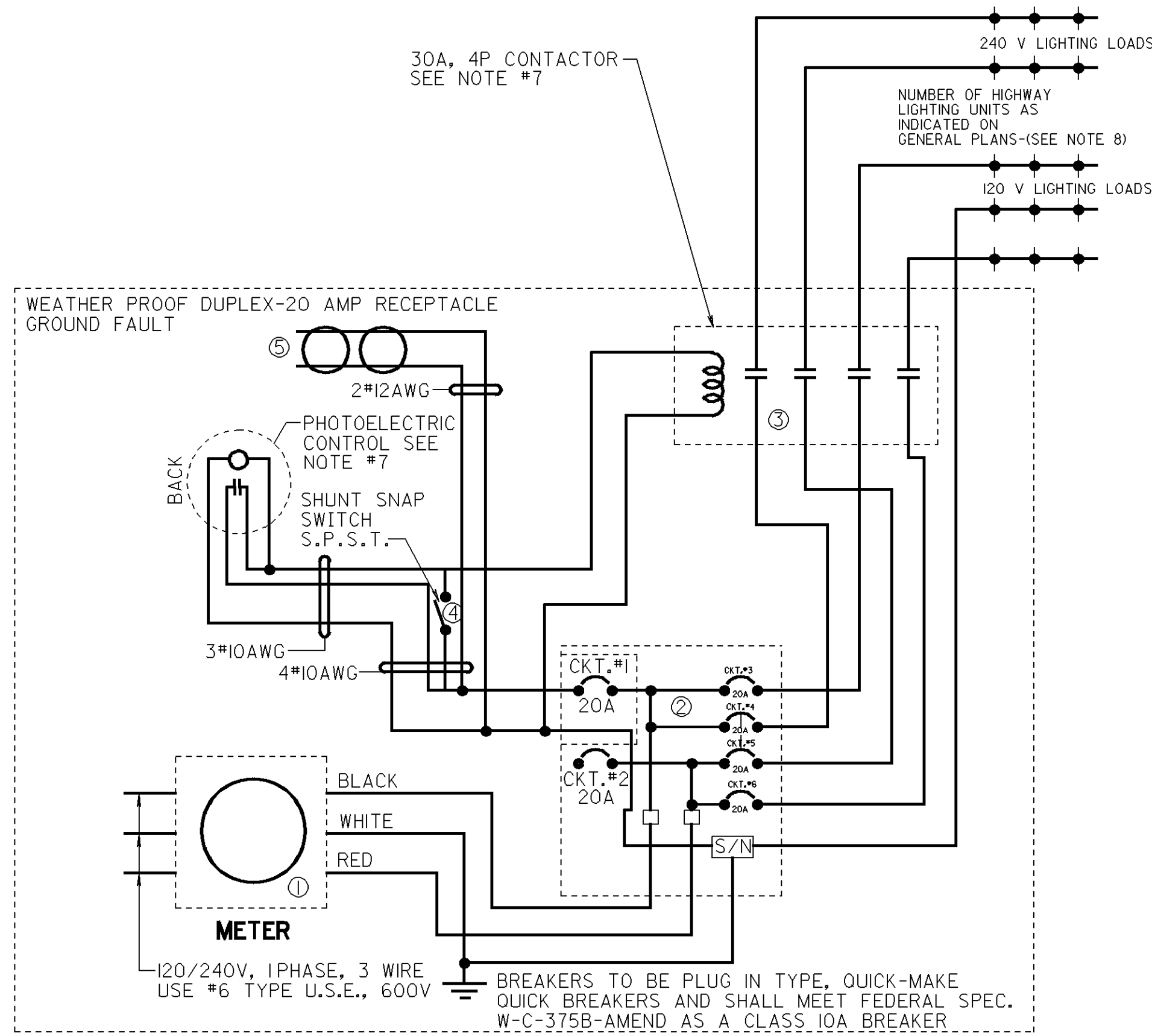
ALUMINUM ALLOY, COMMERCIAL DESIGNATION 356
A.S.T.M. DESIGNATION B26-56T, ALLOY SG 70A



KEY ALIKE CHANGE #1
CUT ON BLANK 04266
FOR SUB TREASURY LOCK #03575
PROVIDE 2 KEYS WITH EACH CABINET



METER CABINET TYPE "L"
120/240 VOLT 40 AMP MAX. LOAD



NOTE
ALL WIRE TO BE #6-AWG-600 VOLT
OR AS OTHERWISE SHOWN.

SCHEMATIC WIRING DIAGRAM: 120/240 VOLT

NOTE

- METER SOCKET-INSTALLED BY CONTRACTOR-PROVIDED BY
UTILITY COMPANY ON REQUEST. (IN JCP&L CO. AREA METER
SOCKET IS TO BE INSTALLED AND FURNISHED BY CONTRACTOR)
- 4/8 CIRCUIT LOAD CENTER WITH ENCLOSURE
COMPLETE WITH 6-20A CIRCUIT BREAKERS.
- MAGNETIC CONTACTOR, 30 AMP, 120 VOLT COIL NEMA I ENCLOSURE.
- PHOTOELECTRIC CONTROL UNIT 15 AMP SHUNT SWITCH IN
2" X 4" HANDY BOX OR EQUIVALENT.
- WEATHERPROOF, 20A DUPLEX RECEPTICAL GROUND FAULT.
- IF METER IS NOT REQUIRED, INSTALL 1 1/4" I.D. SEALTITE FLEX
CONDUIT AND 1/4" I.D. NIPPLE FROM REDUCER COUPLING
TO MAIN BREAKER PANEL.
- FOR METER CABINET TYPE "L", PHOTOELECTRIC CONTROL AND
MAGNETIC CONTACTOR SHALL BE FURNISHED AND INSTALLED.
- THE TOTAL NUMBER OF CIRCUIT BREAKERS SHALL
NOT EXCEED SIX.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

METER CABINET DETAILS TYPE "L"
ELECTRICAL INSTALLATION

L-090I

REFERENCE

BDC 000-002 - ORIGINAL SHEET

TABLE I								
SIGN SUPPORT NUMBER	GO SIGN NUMBER	NUMBER OF FIXTURES	DIMENSIONS					
			SPACE "A"	SPACE "B"		SIZE OF SIGN		TILT
				B1	B2	WIDTH	HEIGHT	
C	GO-16	2	2.13M	0.83M	0.84M	3.8M	4.0M	10°
	GO-17	2	2.13M	1.03M	1.04M	4.2M	4.5M	10°
0703-214	GO-6	2	2.808M	1.03M	1.04M	4.878M	4.42M	10°
	GO-5	2	2.13M	0.44M	0.44M	3.5M	4.7M	10°
0703-215	GO-9	2	2.13M	0.835	bl=b2	3.8M	4.0M	15°
	GO-15	2	2.13M	0.765	bl=b2	3.66M	4.27M	15°
	GO-16	2	2.13M	0.765	bl=b2	3.66M	4.27M	15°
	GO-17	2	2.13M	0.765	bl=b2	3.66M	4.27M	15°
0703-219	GO-10	2	2.13M	0.83M	0.84M	3.8M	4.0M	10°
	GO-11	2	2.13M	1.034	0.86M	4.2M	4.2M	10°
	GO-21	2	2.13M	1.034	0.86M	4.2M	4.2M	10°
	* GO-22	2	2.895M	1.0	0.065	3.96M	4.2M	B1 10° B2 5°
0703-220	GO-12	2	2.13M	1.034	0.86M	4.2M	4.2M	10°
	* GO-24	2	2.13M	1.034	0.86M	4.2M	4.2M	10°
	GO-25	EXISTING						
P 0703-222	* GO-15	2	2.13M	1.034	0.86M	4.2M	4.2M	10°
	* GO-13	2	2.13M	0.9	0.96	3.14M	3.9M	10°
	GO-38	EXISTING						
C EXISTING IMMED. RT. OF GO-17		2	3.13M	0.765	0.675	4.57M	3.2M	10°

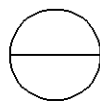
* EXISTING

SIGN SUPPORT NUMBER	GO SIGN NUMBER	PHOTOMETRIC DATA TABLE II ILLUMINATION REQUIREMENTS						
		MIN. INITIAL AVG. LUX	MAX. LUX	MIN. LUX	UNIFORMITY RATIO MAX.-MIN.	SIZE OF SIGN		
						WIDTH	HEIGHT	TILT
C	GO-17	297.59	404.01	148.94	2.71	4.2M	4.5M	15°
	GO-16	301.37	608.58	107.52	5.66	3.8M	4.0M	10°
IMMED. RT. OF EXIST. GO-17	GO-17	335.07*	647.65	146.25	4.43	4.57M	3.2M	10°
	* GO-6	316.17	450.53	148.94	3.02	4.8M	4.4M	10°
0703-214	GO-5	278.10	525.71	95.32	5.51	3.5M	4.7M	10°
	GO-9	301.137	608.58	107.52	5.66	3.8M	4.0M	15°
0703-215	GO-15	297.10	607.35	103.4	5.87	3.66M	4.27M	15°
	GO-16	297.10	607.35	103.4	5.87	3.66M	4.27M	15°
	GO-17	297.10	607.35	103.4	5.87	3.66M	4.27M	15°
	GO-10	301.37	608.58	107.52	5.66	3.8M	4.0M	10°
0703-219	GO-11	328.59	626.45	106.15	5.90	4.2M	4.2M	10°
	* GO-21	328.59	626.45	106.15	5.90	4.2M	4.2M	10°
	* GO-22	329.69	673.10	111.93	6.01	3.96M	4.2M	B1 10° B2 5°
0703-220	GO-12	328.59	626.45	106.15	5.90	4.2M	4.2M	10°
	* GO-24	328.59	626.45	106.15	5.90	4.2M	4.2M	10°
	GO-25	EXISTING						
P 0703-222	GO-15	281.48	576.53	96.0	6.0	4.2M	4.2M	10°
	GO-13	301.97	584.55	112.42	5.20	3.14M	3.9M	10°
	GO-38	EXISTING						

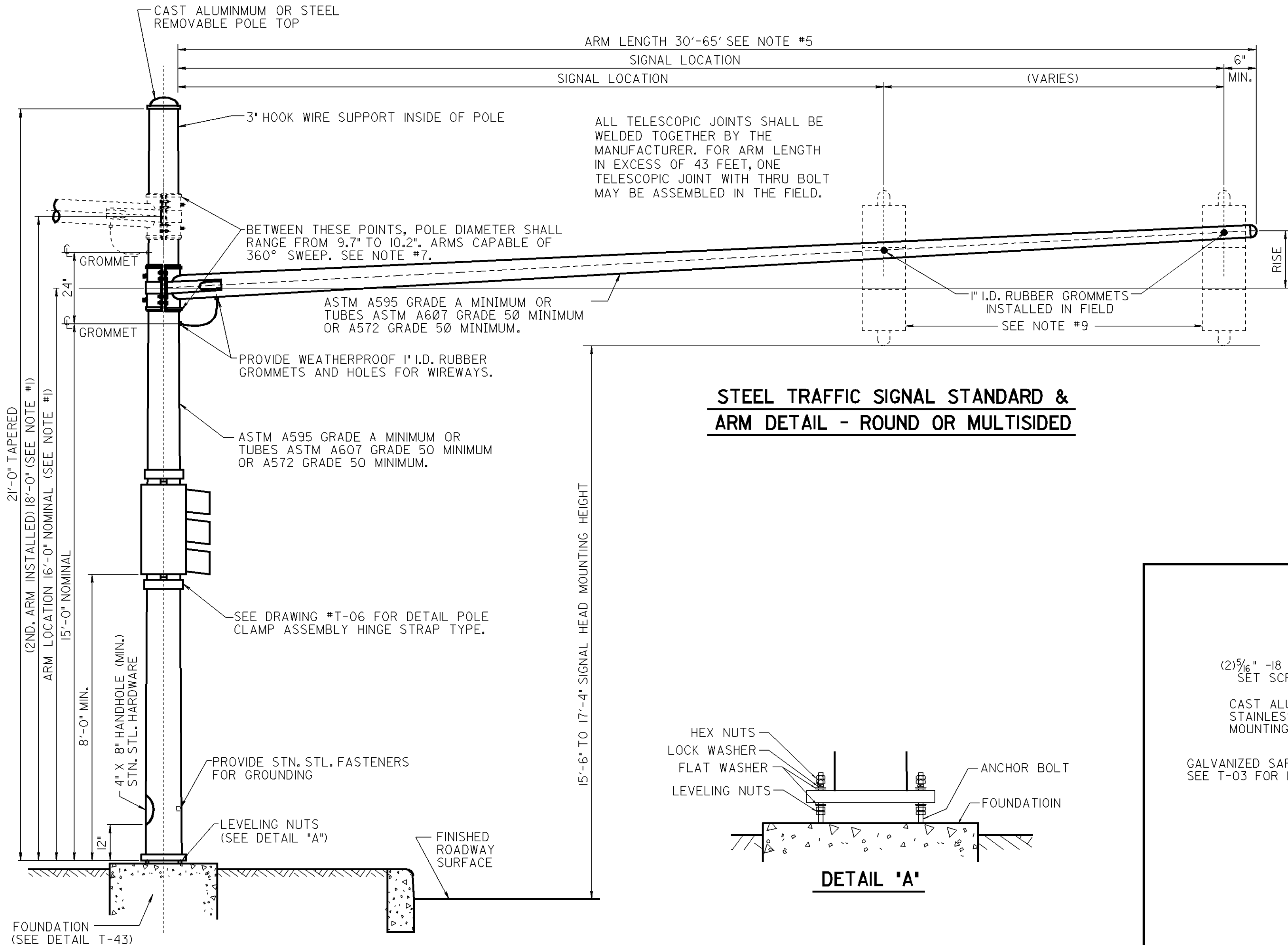
* 4.57X3.2H SIGN TO RT. OF GO-17

* EXISTING

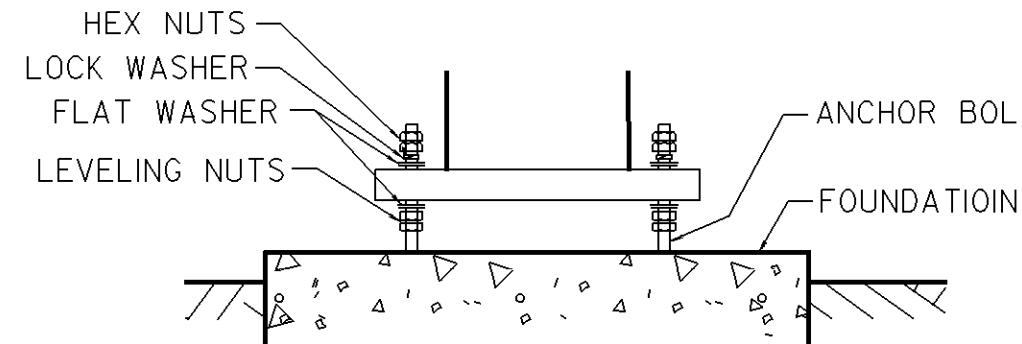
THIS SHEET REQUIRES THAT DESIGN SPECIFIC INFORMATION BE ADDED. IT THEREFORE WILL ALWAYS BE SUPERSEDED IN THE CONSTRUCTION PLANS.



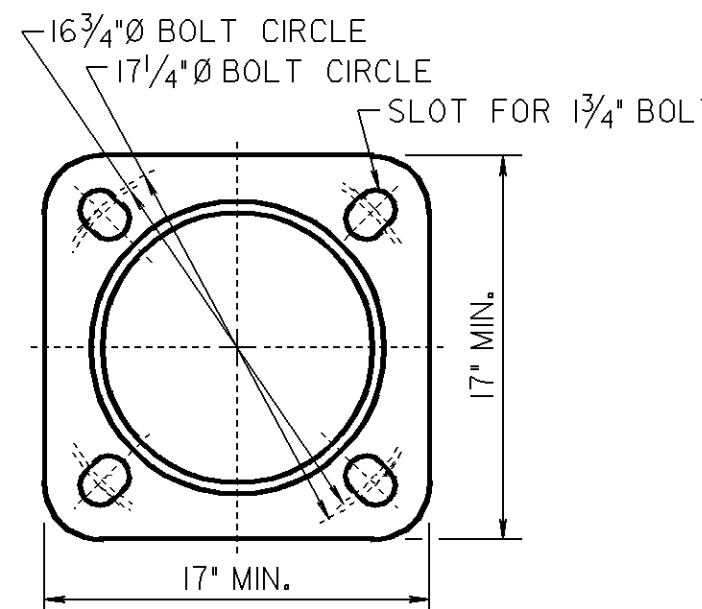
POLE SHALL NOT BE INSTALLED WITHOUT ARM



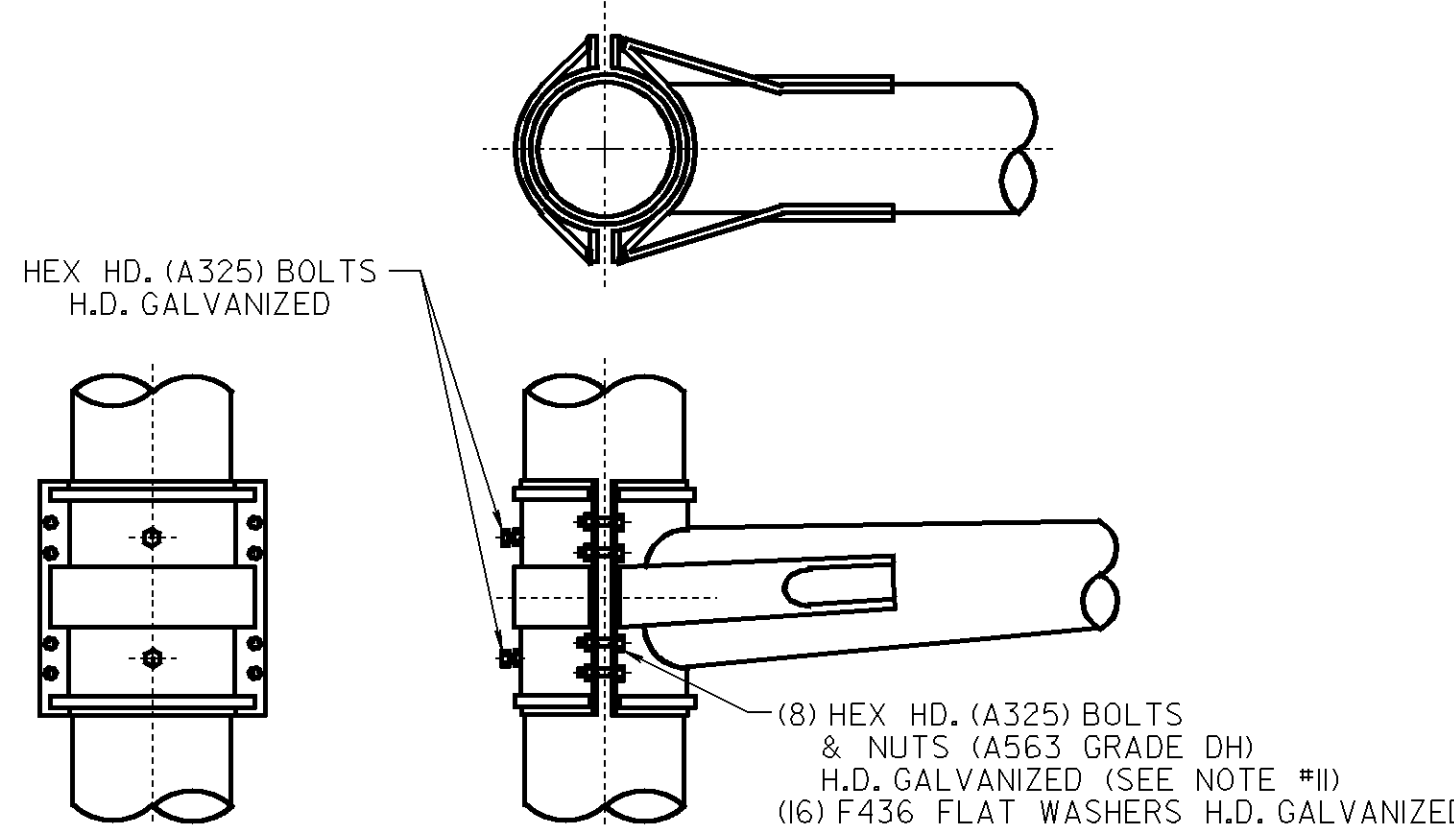
STEEL TRAFFIC SIGNAL STANDARD & ARM DETAIL - ROUND OR MULTISIDED



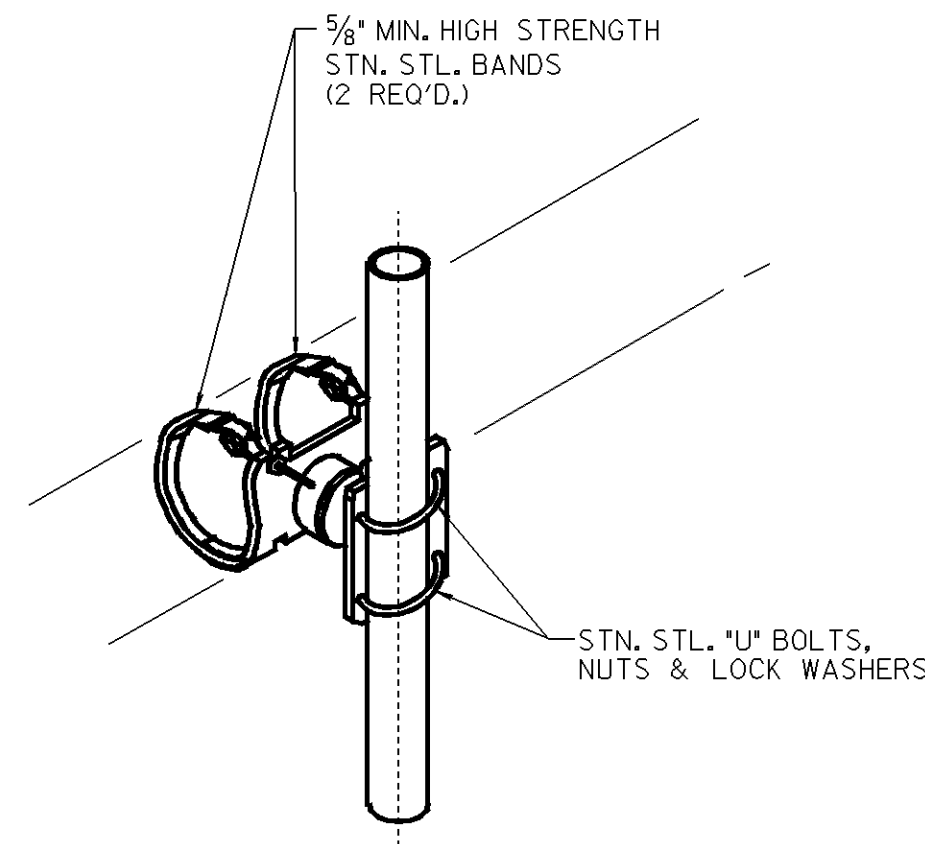
DETAIL 'A



BASE DETAIL

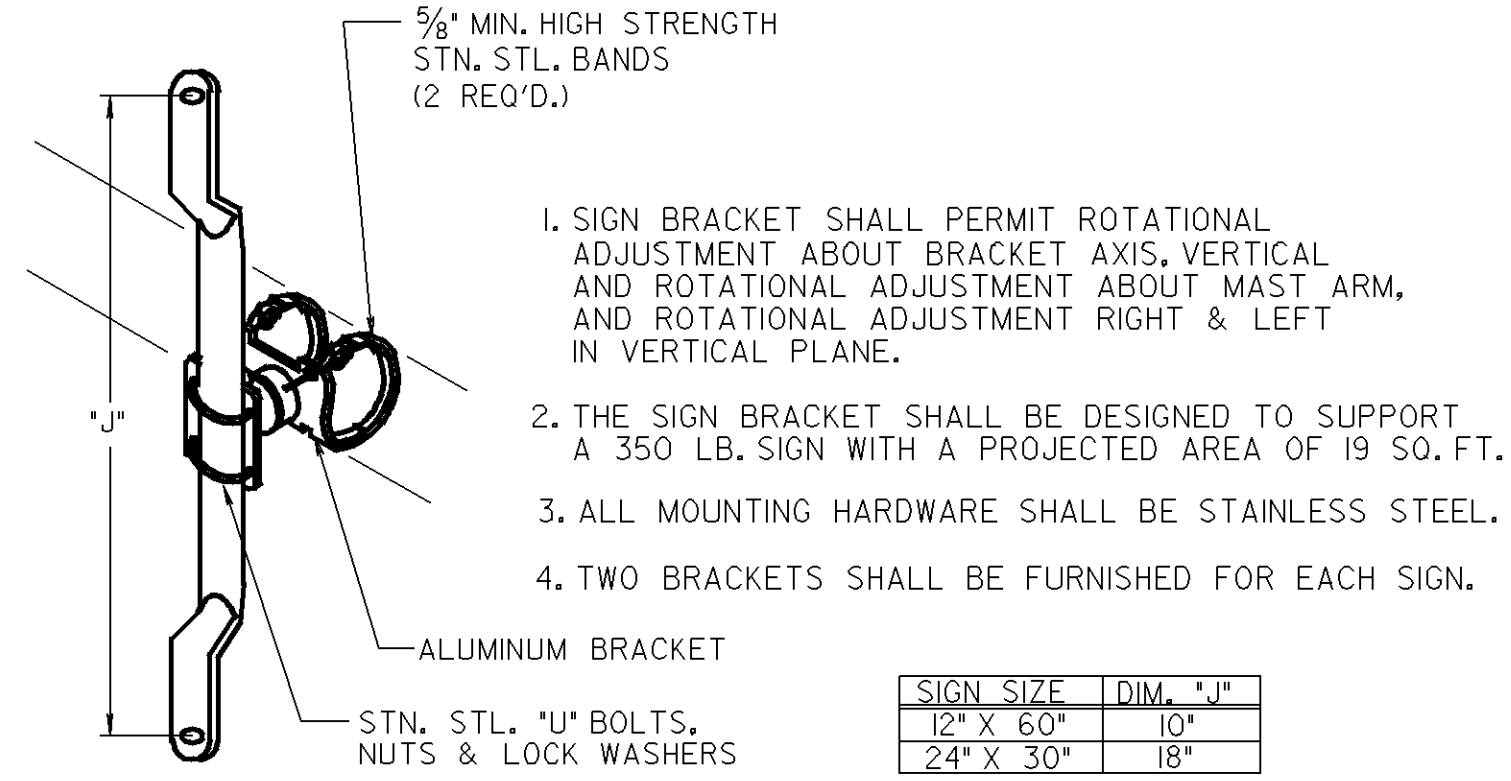


ARM CONNECTION DETAIL



NOTE

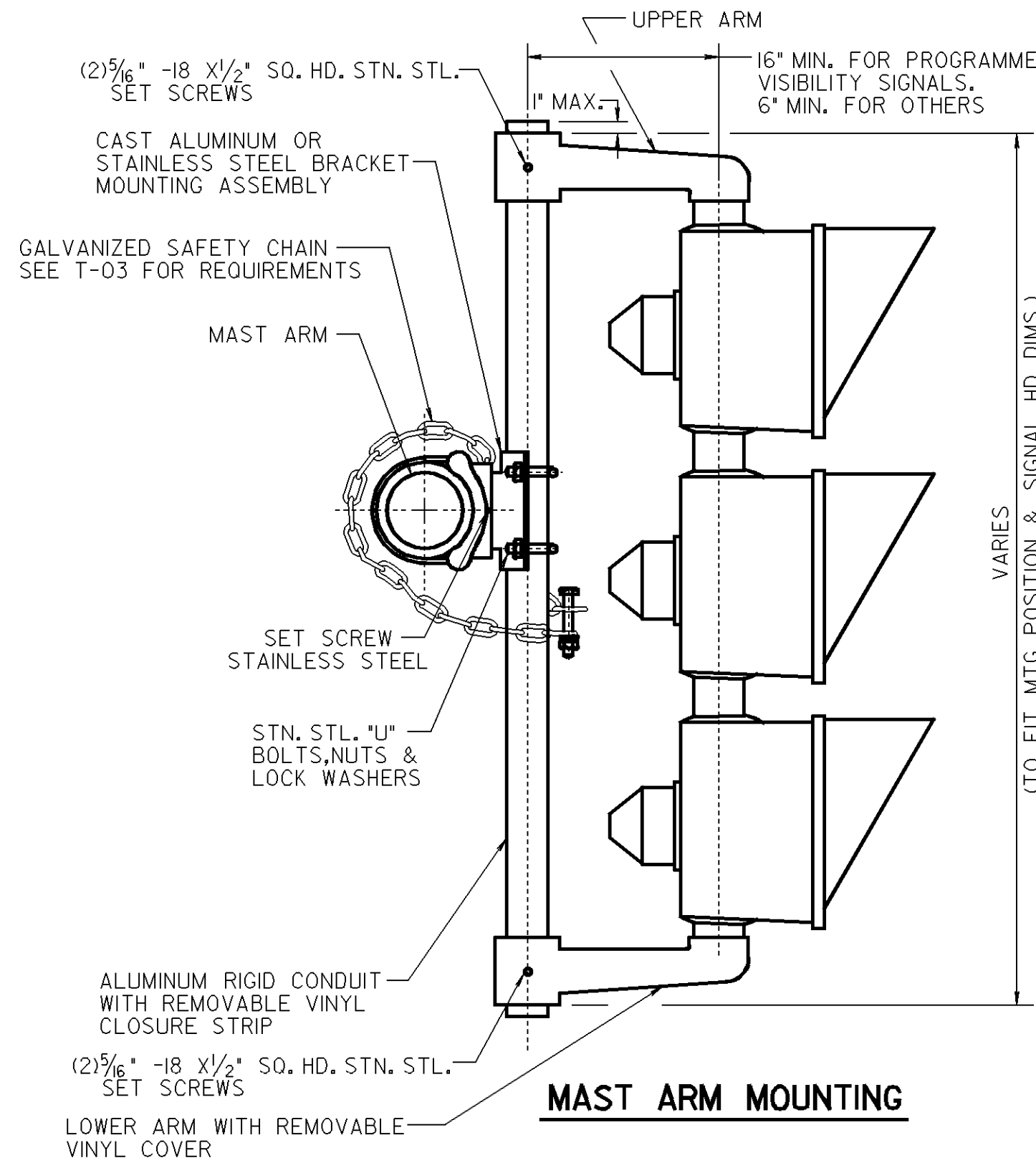
A. ALL HARDWARE SHALL BE STN. STL. EXCEPT AS NOTED



ALUMINUM SIGN BRACKET DETAIL

NOTES

1. ALL POLES AND MAST ARMS SHALL BE HOT DIPPED GALVANIZED STEEL. FINISH IN ACCORDANCE WITH SPECIFICATIONS ASTM A123.
2. STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE 1996 (6th EDITION) AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, INCLUDING INTERIMS, THE 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNAL, INCLUDING INTERIMS, AND THE 1987 NEW JERSEY DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, WITH MODIFICATIONS.
3. ARMS WILL SUPPORT THE FOLLOWING (MAXIMUM LOADING):
 - FIXED SIGNALS BACK-TO-BACK AT THE END OF ARM, TOTAL WT. = 100 LBS., PROJ. AREA = 8.4 S.F.
 - FIXED SIGNALS BACK-TO-BACK AT A MINIMUM DISTANCE OF 1/3 THE ARM LENGTH FROM THE END, TOTAL WT. = 100 LBS. PROJ. AREA = 8.4 S.F.
 - FIXED SIGN (MAX. DEPTH = 2.0 FT.) MIDWAY BETWEEN SIGNALS, WT. = 70 LBS., PROJ. AREA = 12 S.F.
4. POLE WILL SUPPORT TWO MAST ARMS, ONE 45 FT. AND ONE 30 FT. IN LENGTH (MAX.) WITH THE ABOVE LOADING ON EACH ARM AND A MINIMUM ARM SEPARATION ANGLE OF 45 °OR ONE ARM WITH A MAXIMUM LENGTH OF 65' WITH THE ABOVE LOADING.
5. SIZE OF ARM SUPPLIED SHALL BE NOTED ON PLAN SHEET OR BID PROPOSAL.
6. ALL POLES AND ARMS MUST BE ROUND OR MULTISIDED. (MINIMUM 8 SIDED).
7. CLAMP FOR ALL MAST ARMS MUST BE CAPABLE OF ACCOMMODATING VARIOUS POLE DIAMETERS (9.7" TO 10.2") WITHOUT AFFECTING LOAD CHARACTERISTICS OF ASSEMBLED UNIT. ALL CLAMPS MUST BE DESIGNED FOR ATTACHMENT TO ROUND OR MULTISIDED POLES. CLAMP MUST BE CAPABLE OF ROTATIONAL ° ADJUSTMENT RIGHT AND LEFT FROM VERTICAL PLANE AND 360° ROTATIONAL ADJUSTMENT ABOUT MAST ARMS.
8. THE ARM LOCATION SHALL BE DETERMINED IN THE FIELD TO PROVIDE A ROADWAY CLEARANCE OF 15'-6" MIN. TO 17'-4" MAX. TO ALL INDICATIONS. THE RESIDENT ENGINEER SHALL DETERMINE WHICH ARM SHALL BE MOUNTED AT THE TOP POSITION TO PROVIDE THE PROPER CLEARANCE.
9. ALL INDICATIONS SHALL BE SET PLUMB AND AT THE SAME ELEVATION.
10. CERTIFICATION BY A LICENSED PROFESSIONAL ENGINEER SHALL BE SUPPLIED WHICH INCLUDES DESIGN CALCULATIONS THAT POLE AND ARM DESIGN MEETS ALL SPECIFIED LOADING REQUIREMENTS.
11. ALL HEX NUTS, A563 GRADE DH, SHALL BE INSTALLED BY "TURN OF THE NUT METHOD", SEAT NUT, THEN TORQUE MINIMUM 1/2 TURN.
12. ANCHOR BOLTS, LOCK WASHERS, FLAT WASHERS, NUTS, AND LEVELING NUTS SHALL BE SUPPLIED WITH EACH POLE. LEVELING NUTS SHALL BE ASTM A307.



MAST ARM MOUNTING

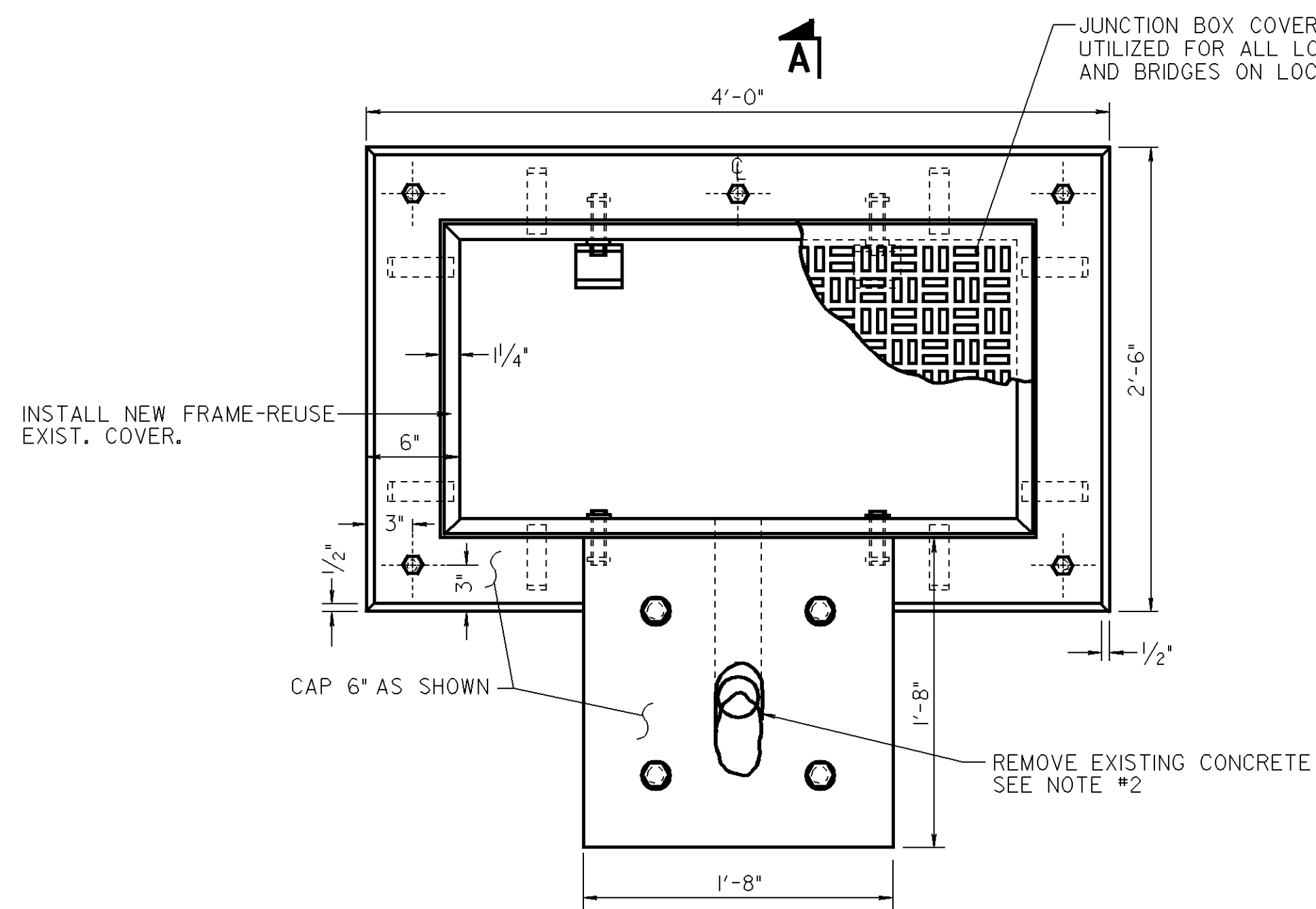
NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

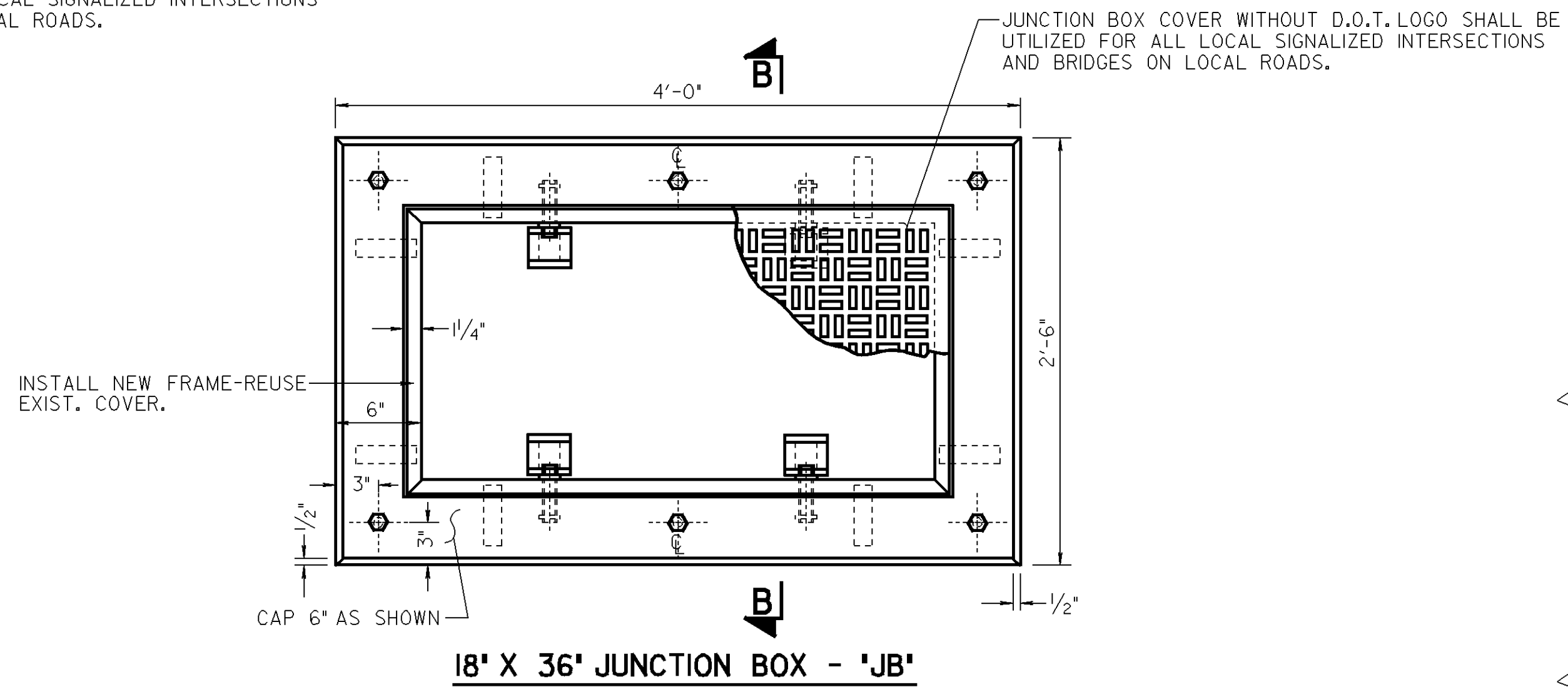
N.T.S

STEEL TRAFFIC SIGNAL POLE AND ARM DETAILS

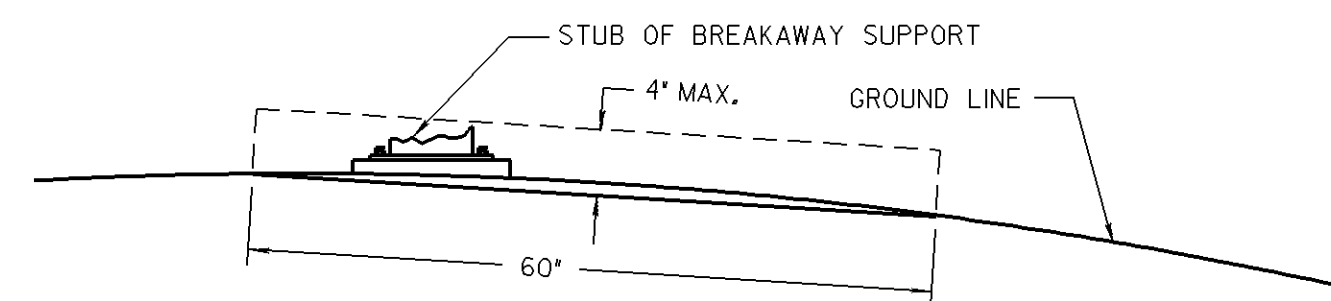
T-1101



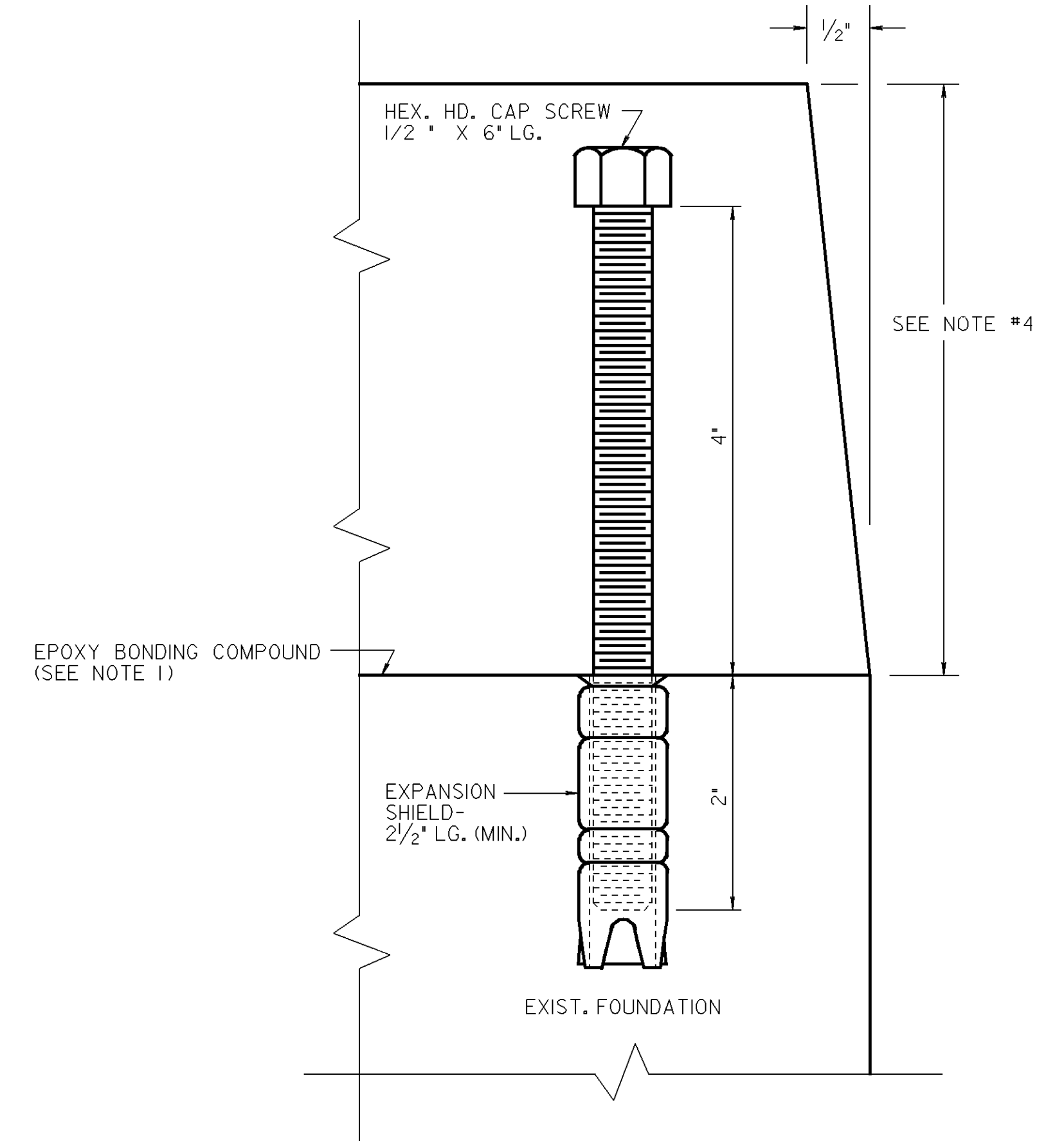
JUNCTION BOX FOUNDATION - 'JBF'



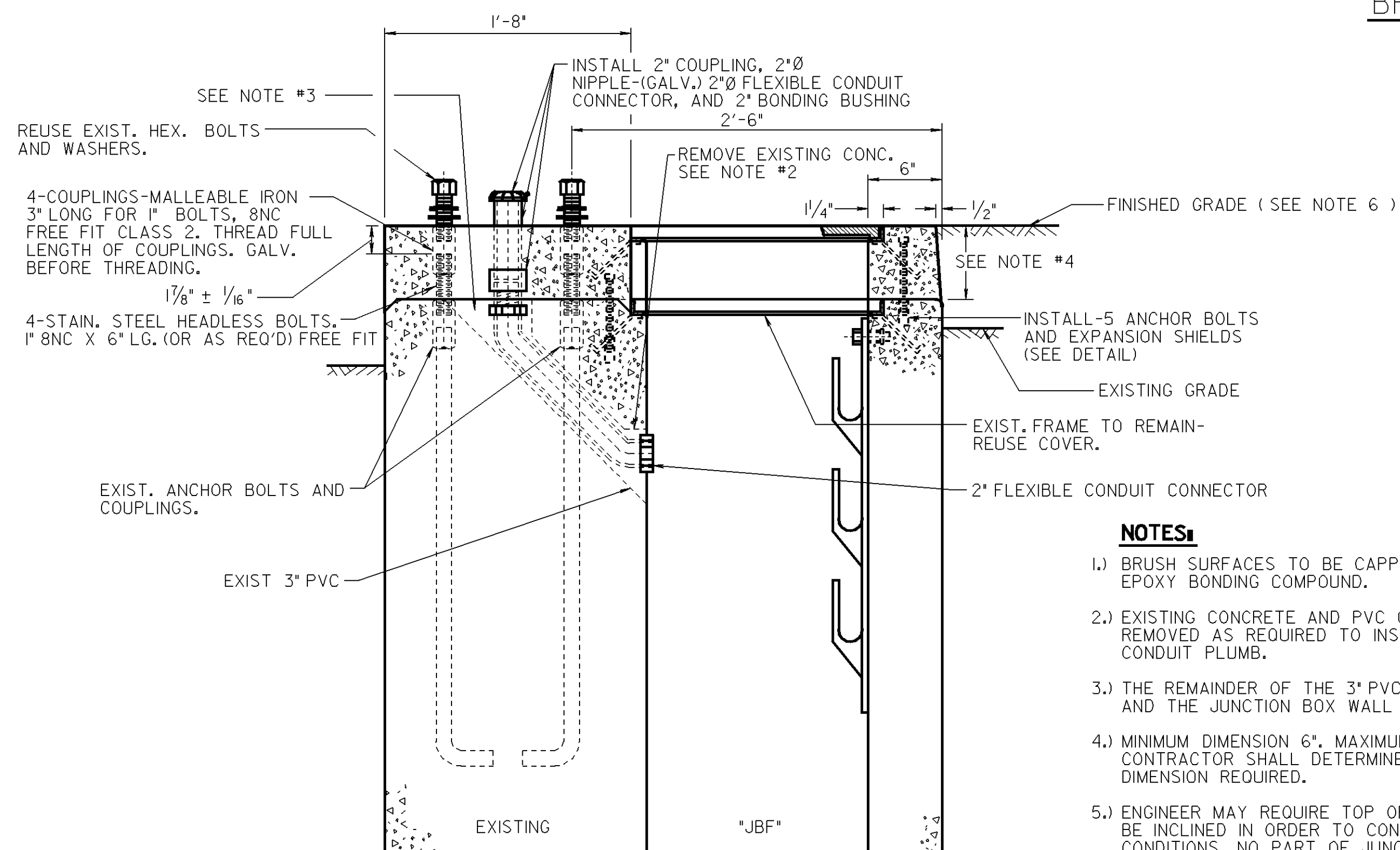
18' X 36' JUNCTION BOX - 'JB'



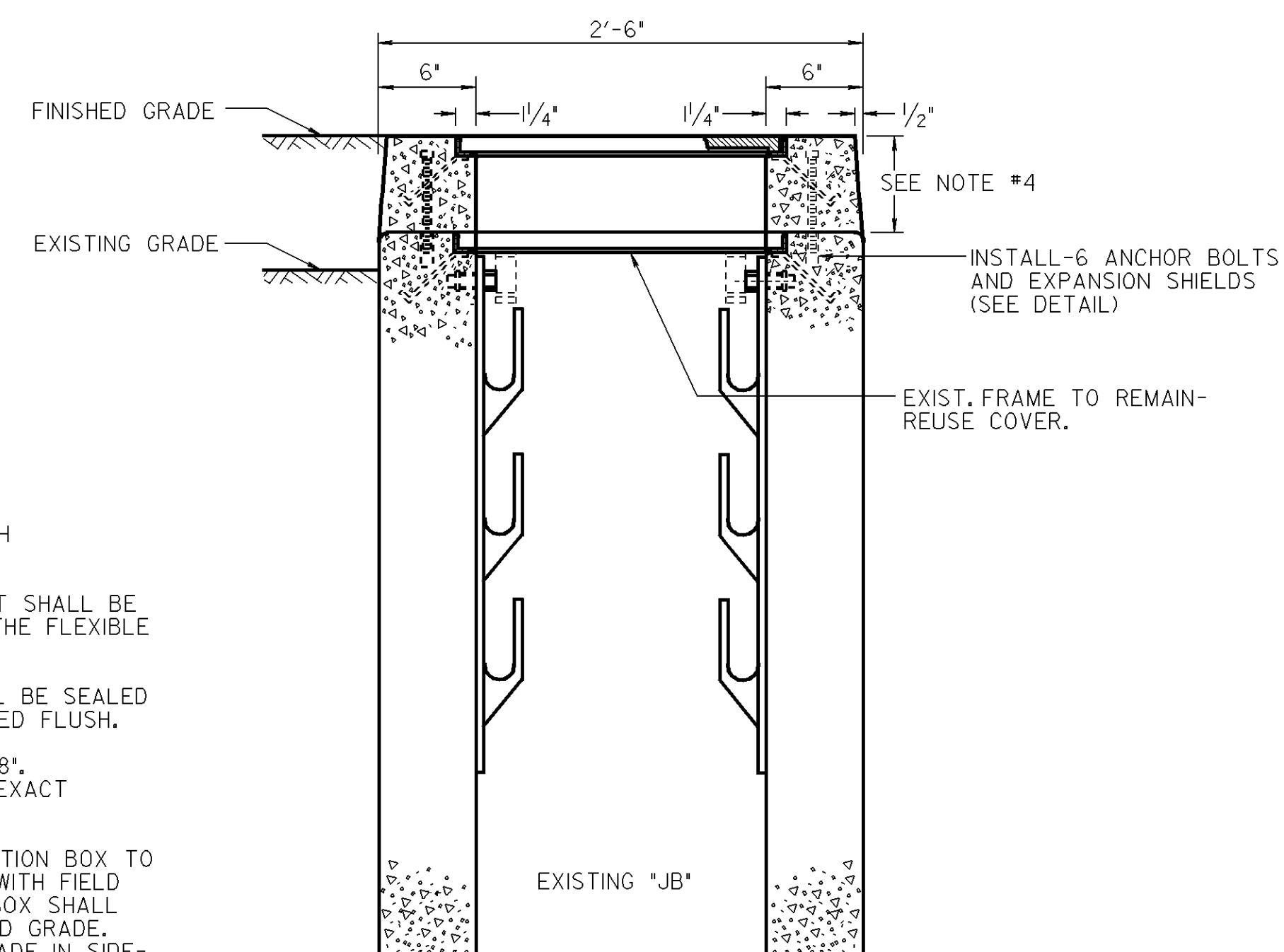
BREAKAWAY SUPPORT HEIGHT MEASUREMENT
DETAIL "A"



DETAIL FOR ANCHOR BOLTS



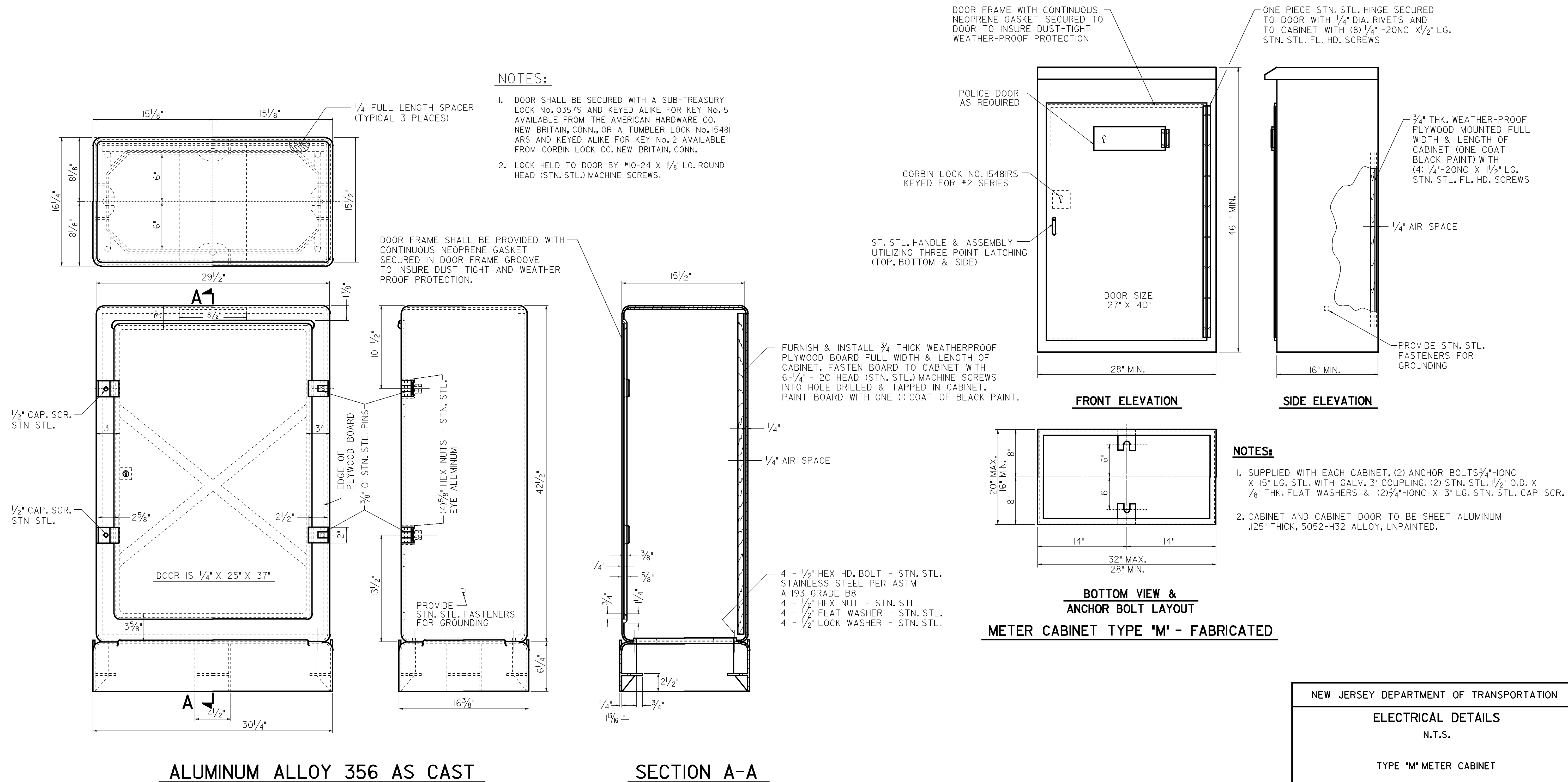
SECTION A-A



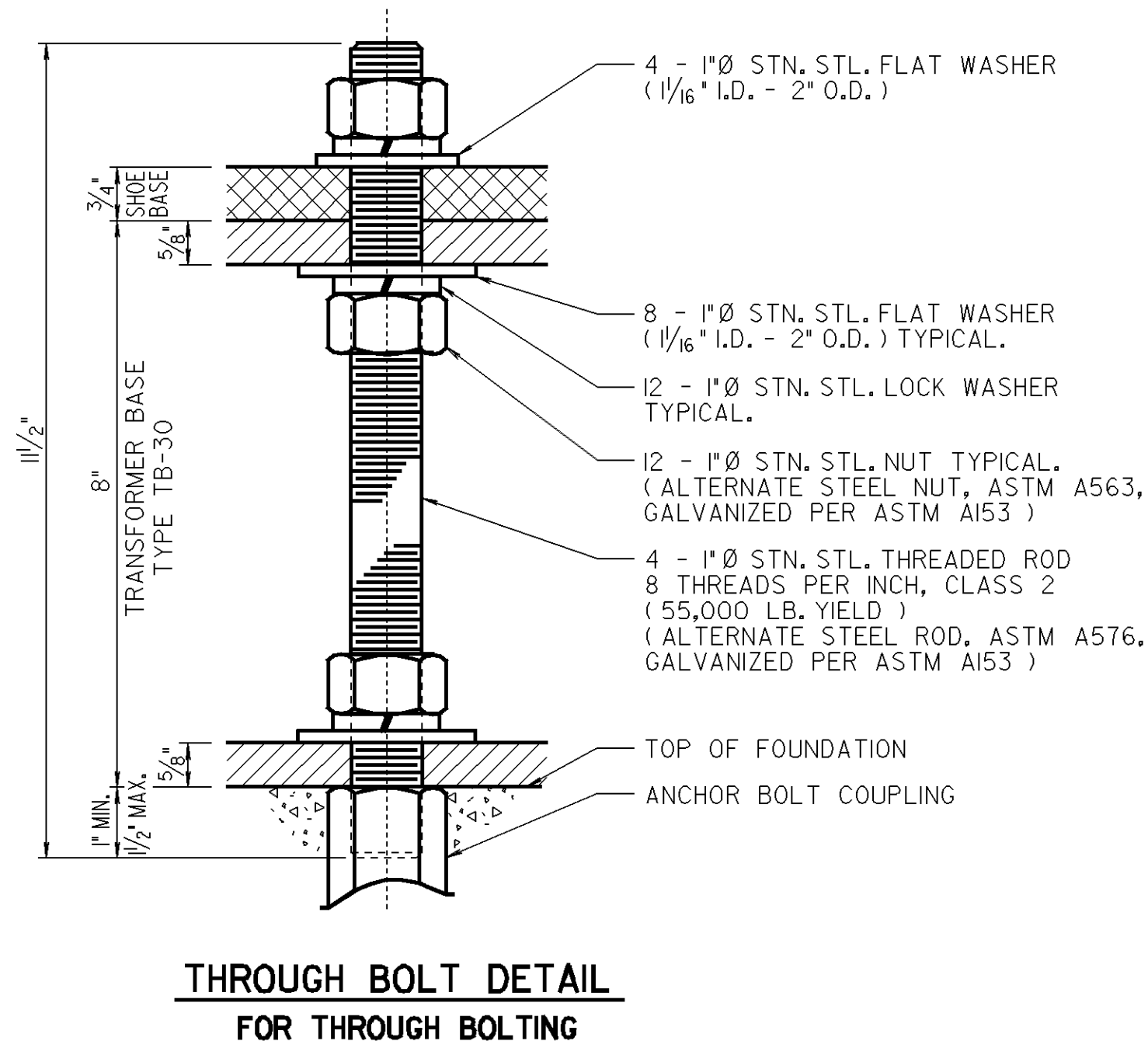
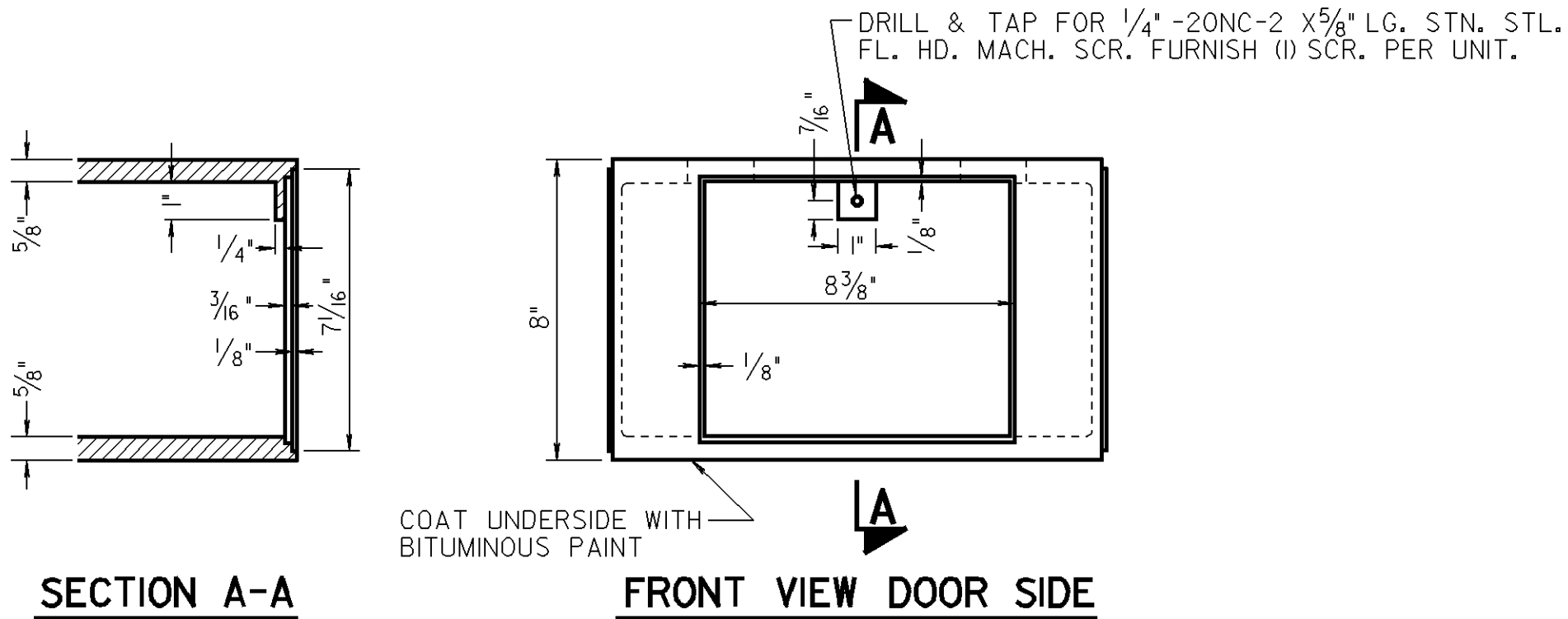
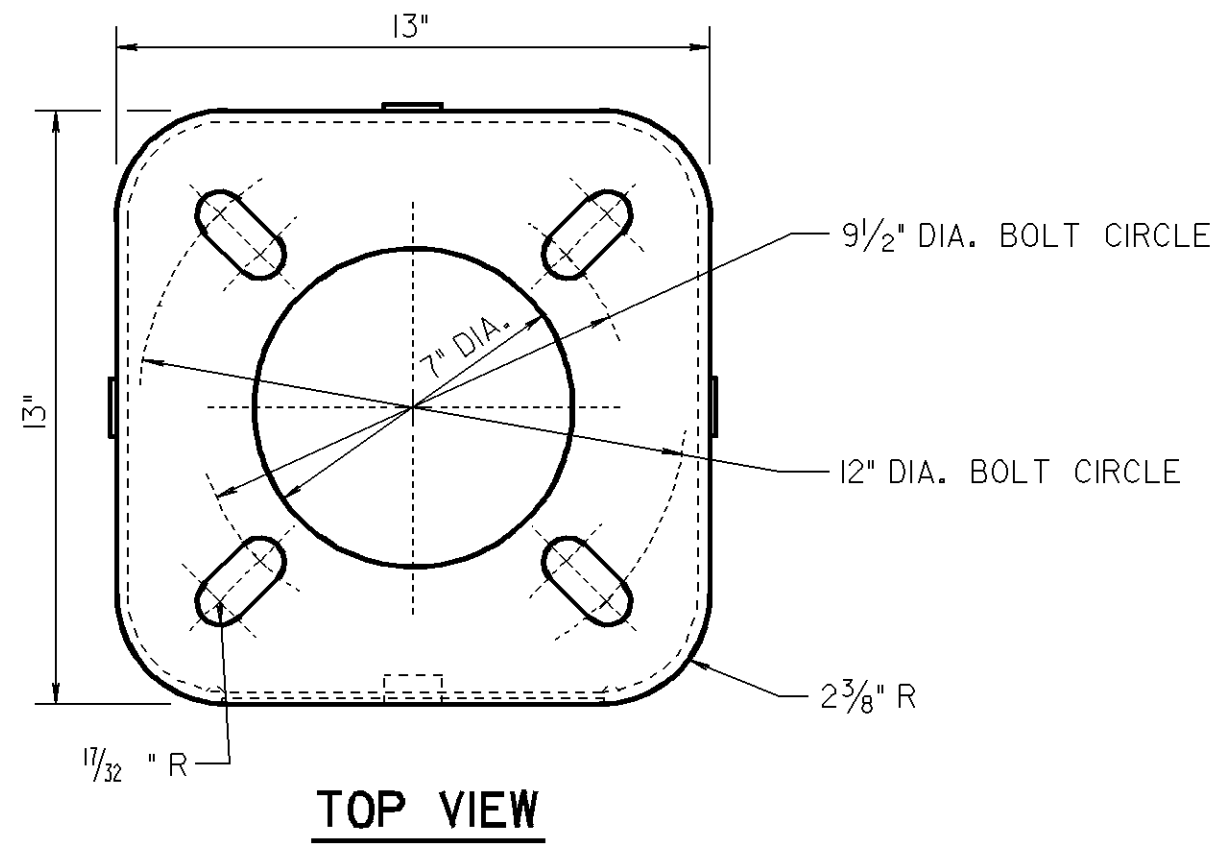
SECTION B-B

CAPPING DETAILS FOR EXTENSIONS OF EXISTING JUNCTION BOX FOUNDATION - ('JBF')
AND 18" X 36" JUNCTION BOX - ('JB')

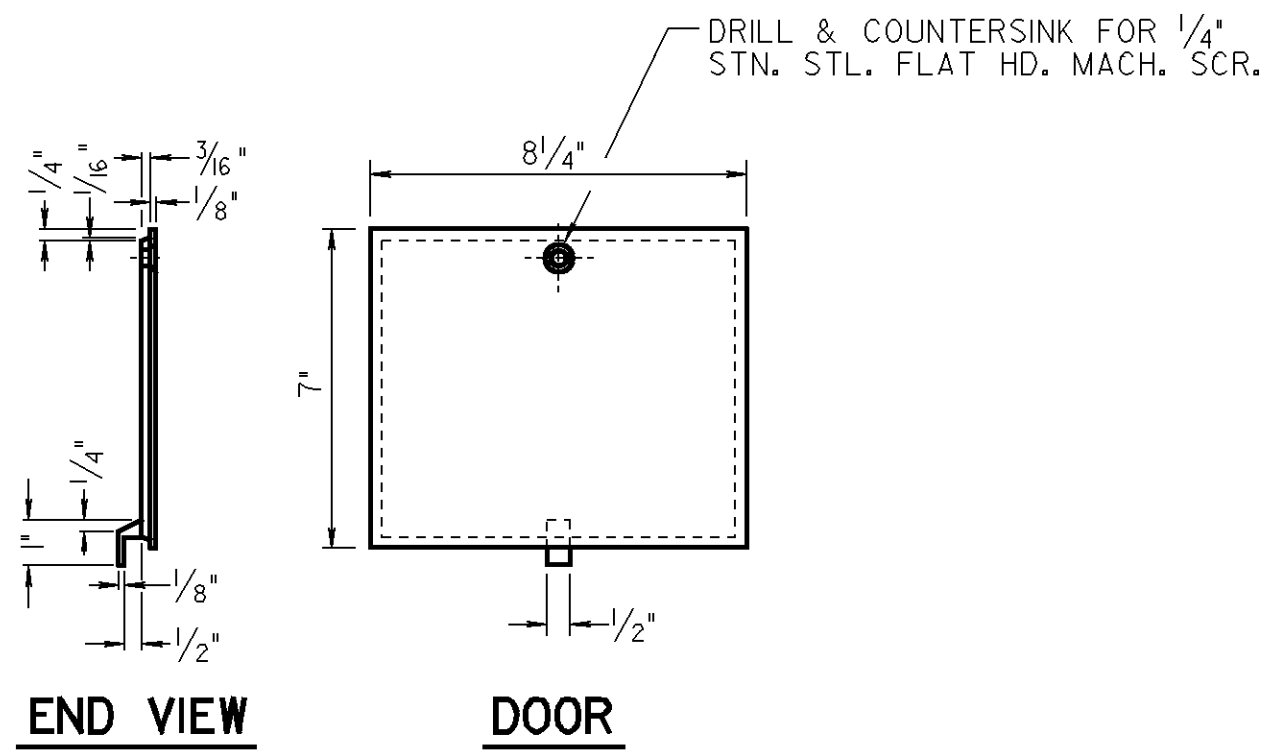
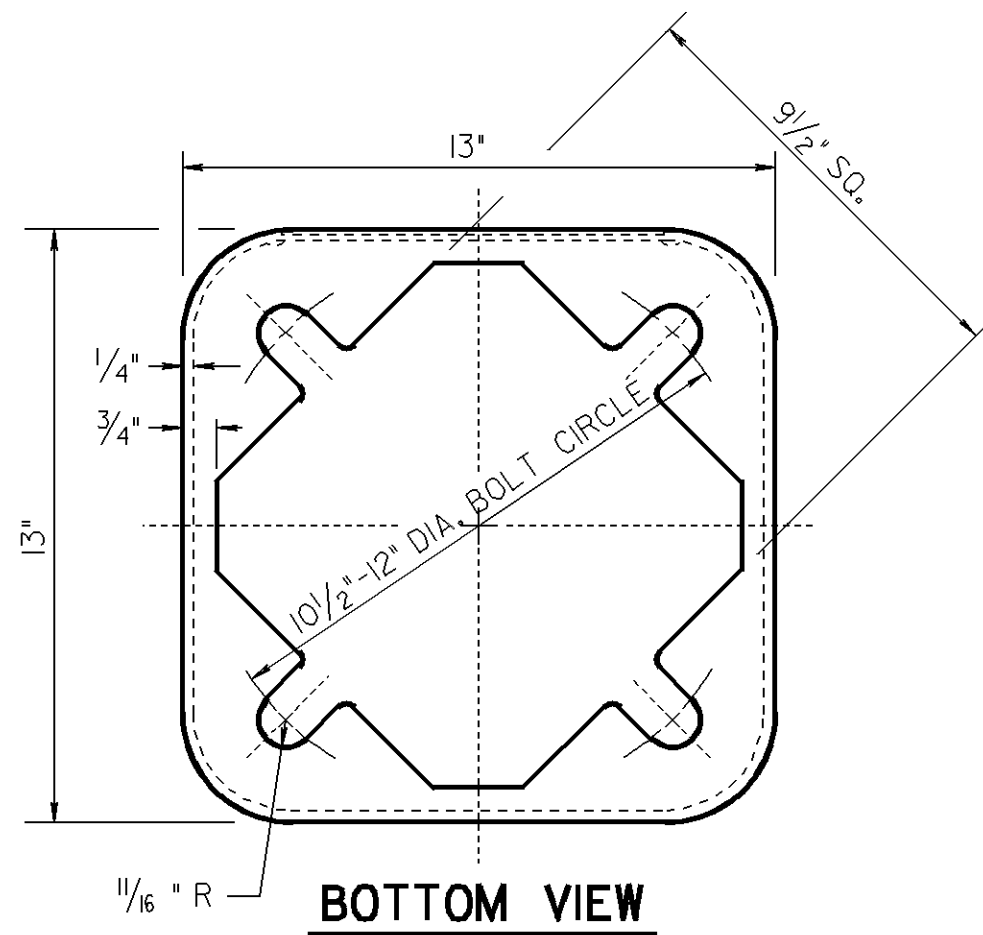
- ## **NOTES:**
- 1.) BRUSH SURFACES TO BE CAPPED WITH EPOXY BONDING COMPOUND.
 - 2.) EXISTING CONCRETE AND PVC CONDUIT SHALL BE REMOVED AS REQUIRED TO INSTALL THE FLEXIBLE CONDUIT PLUMB.
 - 3.) THE REMAINDER OF THE 3" PVC SHALL BE SEALED AND THE JUNCTION BOX WALL GROUTED FLUSH.
 - 4.) MINIMUM DIMENSION 6". MAXIMUM OF 18". CONTRACTOR SHALL DETERMINE THE EXACT DIMENSION REQUIRED.
 - 5.) ENGINEER MAY REQUIRE TOP OF JUNCTION BOX TO BE INCLINED IN ORDER TO CONFORM WITH FIELD CONDITIONS. NO PART OF JUNCTION BOX SHALL EXTEND MORE THAN 2" ABOVE FINISHED GRADE. JUNCTION BOX SHALL BE SET TO GRADE IN SIDE-WALK AREA.
 - 6.) JUNCTION BOX FOUNDATION IN DIRT OR GRASS AREAS SHALL MEET THE CRITERIA AS PER DETAIL "A".



REFERENCE



ALUMINUM ALLOY CASTING
356-T6-PERMANENT MOLD
OR SAND CASTING



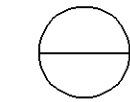
ALUMINUM TRANSFORMER BASE
PART NO. NJTB - 30

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS
N.T.S.

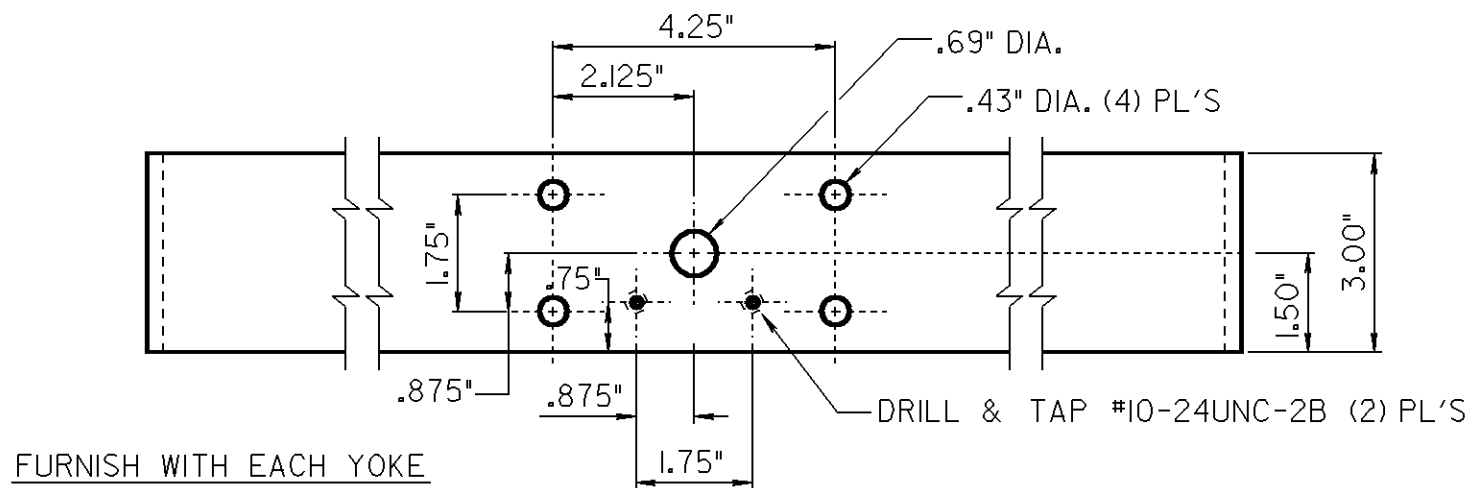
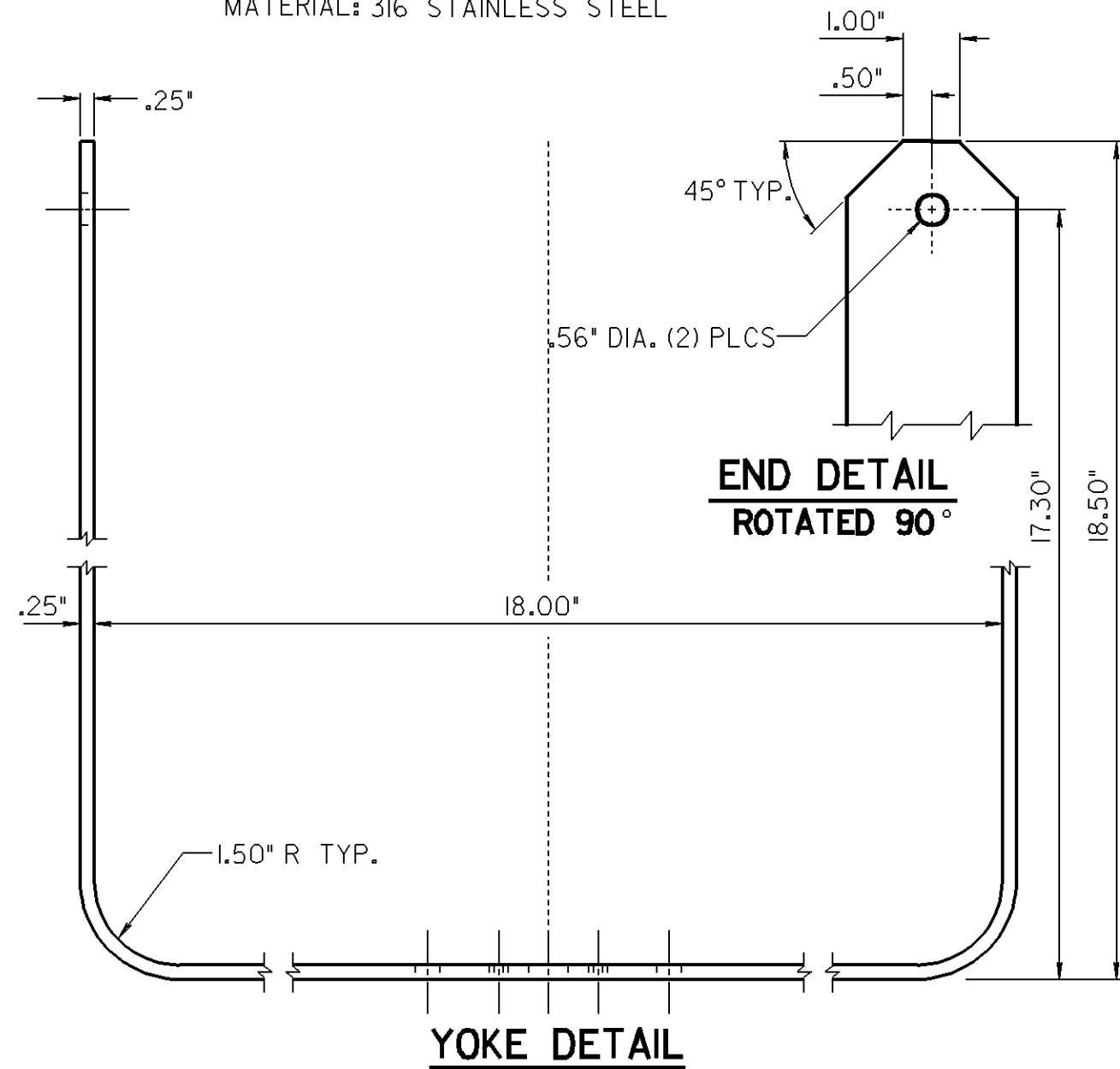
ALUMINUM TRANSFORMER BASE DETAILS
PART NO. NJTB - 30

L-1501

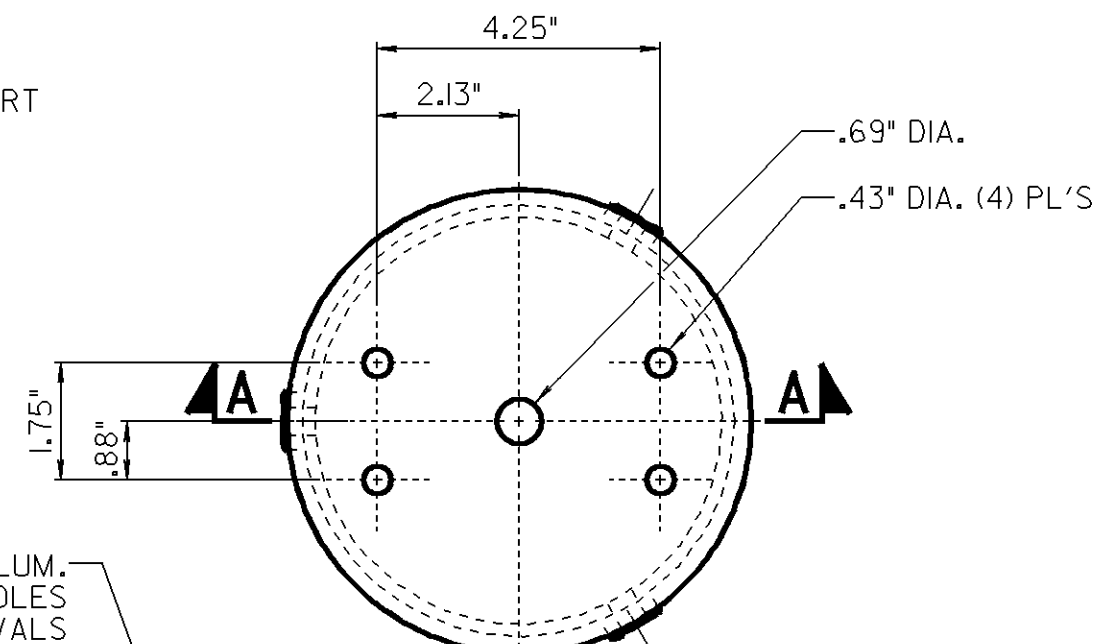


REFERENCE

MATERIAL: 316 STAINLESS STEEL



FURNISH WITH EACH YOKE
3/8\"/>



WELD (3) 3/8\"/>

ALTERNATE

1/4\"/>

3/8\"/>

4043 1/4\"/>

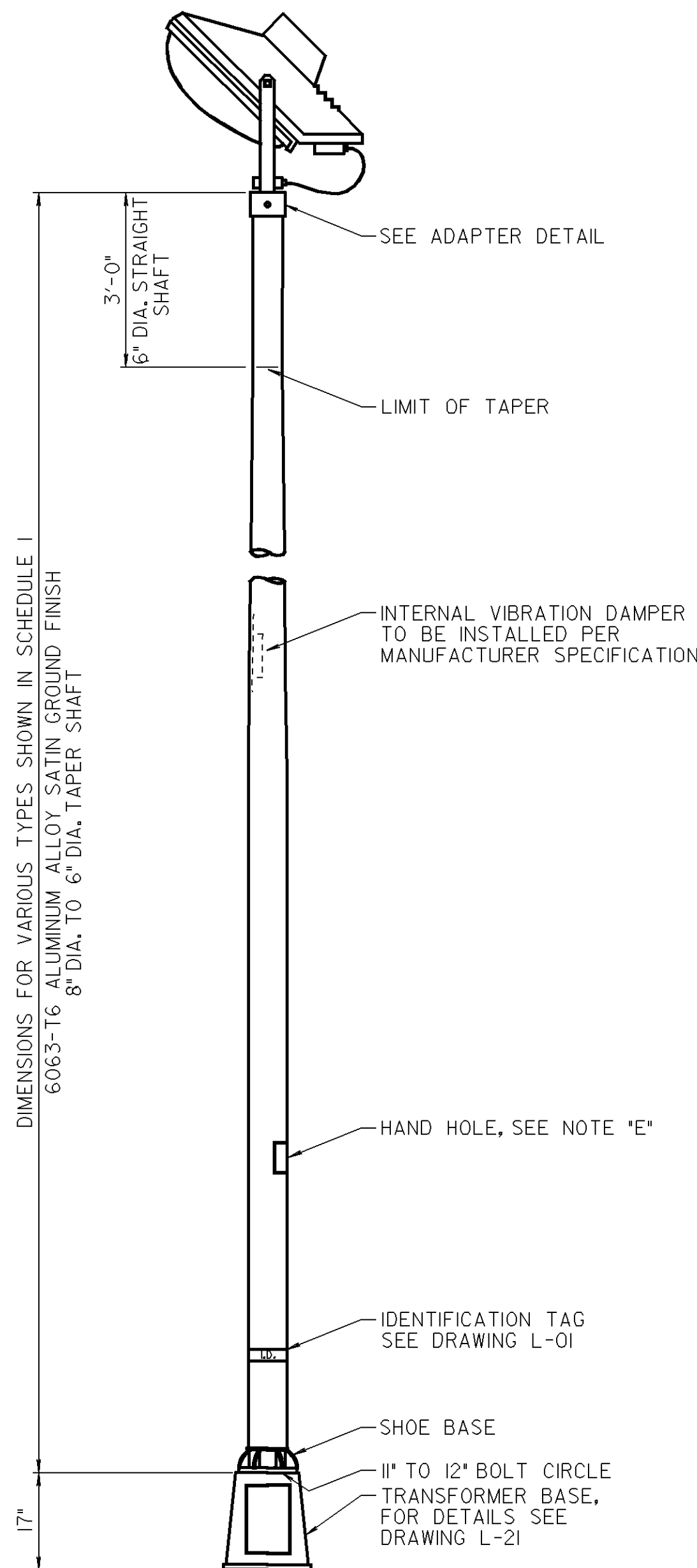
SEE ALTERNATE
FURNISH WITH EACH ADAPTER
(3) 3/8\"/>

(3) 3/8\"/>

NOTE:

THE YOKE SHALL BE DESIGNED TO BE INSTALLED ON MOUNTING ADAPTER. A POSITIVE LOCKING DEVICE SHALL BE PROVIDED FOR VERTICAL ADJUSTMENT SUCH THAT WIND LOAD OF 80 MPH WITH A 1.3 GUST FACTOR WILL NOT AFFECT THE VERTICAL POSITION OF THE LUMINAIRE.

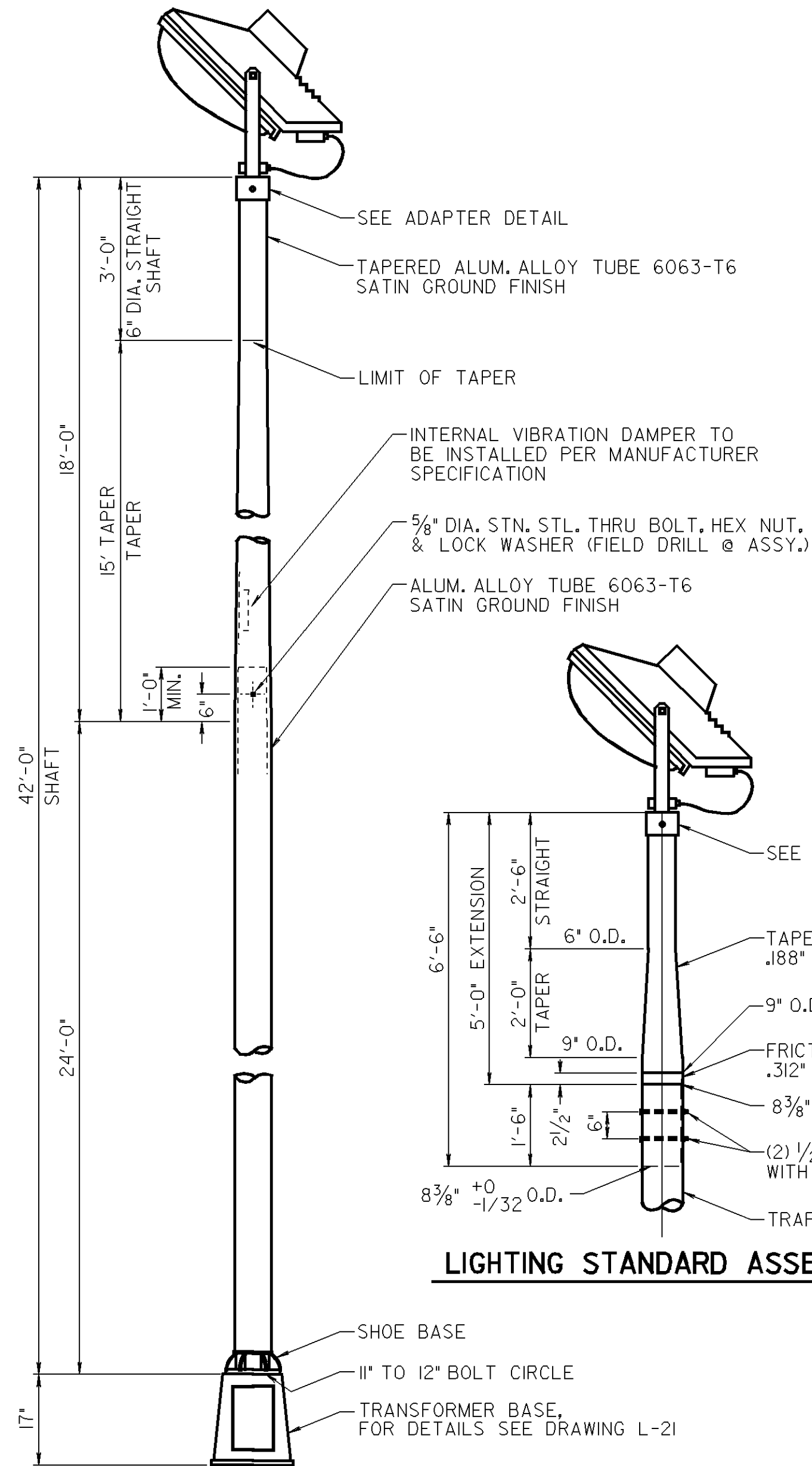
POLE SHALL NOT BE INSTALLED WITHOUT LUMINAIRE



LIGHTING STANDARD ASSEMBLY

SCHEDULE 1

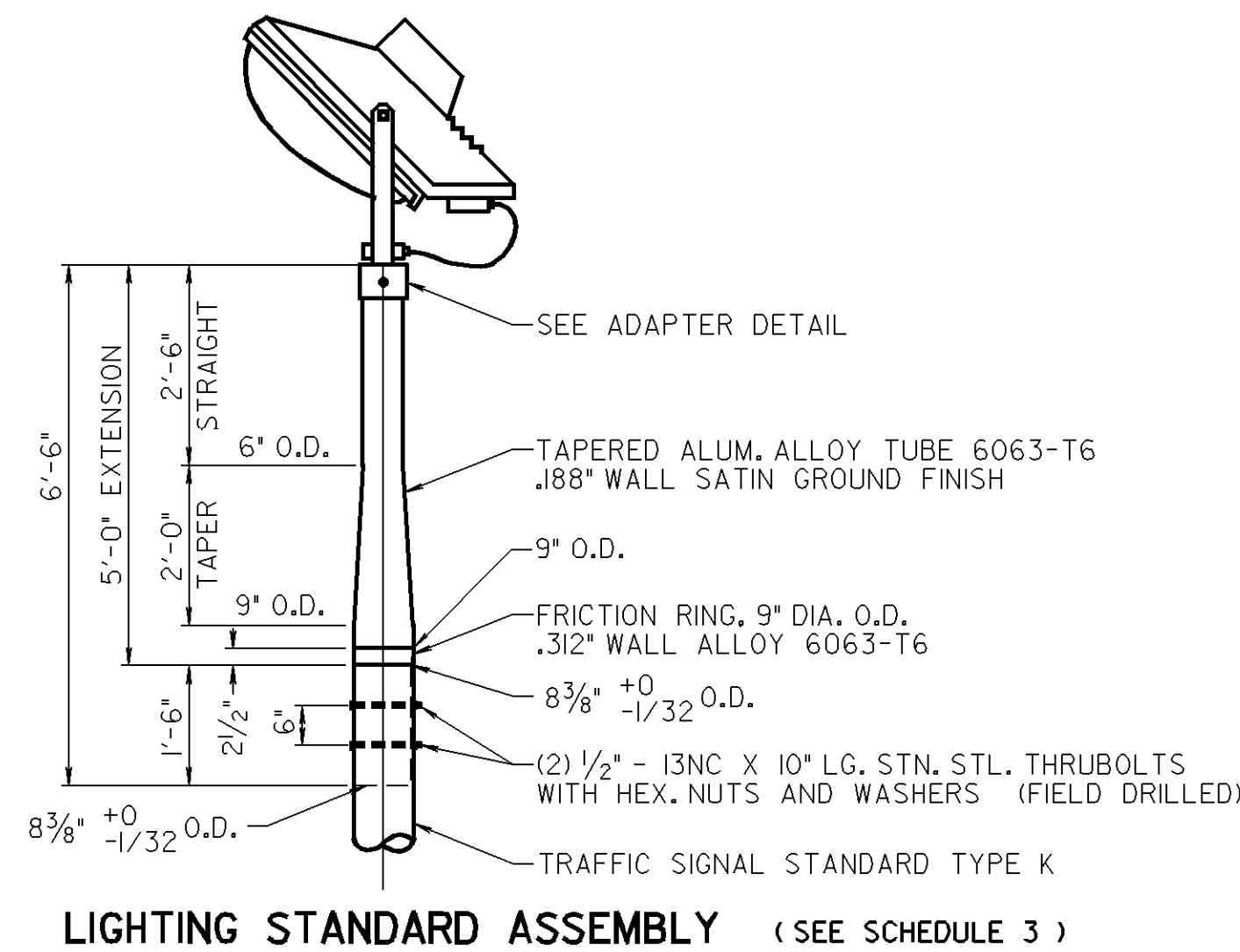
N.J. STANDARD POLES				MAX. LUMINAIRE SIZE	
TYPE	SHAFT DIMENSIONS			WEIGHT	PROJ. AREA SQ. FT.
	TAPER	MIN. WALL THICKNESS	LENGTH		
L-E-S-40-Z	8 X 6	.250"	37'	100#	3.8
L-E-S-40-Y	8 X 6	.250"	37'	100#	3.8
L-E-S-26-Y	8 X 6	.188"	22'	60#	3.0
L-E-S-26-X	8 X 6	.188"	22'	60#	3.0



LIGHTING STANDARD ASSEMBLY

SCHEDULE 2

N.J. STANDARD POLES				MAX. LUMINAIRE SIZE	
TYPE	SHAFT DIMENSIONS			WEIGHT	PROJ. AREA SQ. FT.
	TAPER	MIN. WALL THICKNESS	LENGTH		
L-E-S-45	8 X 6	.250"	42'	100#	3.8



LIGHTING STANDARD ASSEMBLY (SEE SCHEDULE 3)

SCHEDULE 3

N.J. STANDARD POLES				MAX. LUMINAIRE SIZE	
TYPE	SHAFT DIMENSIONS			WEIGHT	PROJ. AREA SQ. FT.
	TAPER	MIN. WALL THICKNESS	LENGTH		
L-E-S-K-Y	9 X 6	.188"	6'-6"	60#	3.0
L-E-S-K-X	9 X 6	.188"	6'-6"	60#	3.0

NOTES:

A. CERTIFICATIONS SHALL BE FURNISHED THAT ALUMINUM ALLOY AND TEMPER SHOWN MEET REQUIREMENTS AS SET FORTH BELOW OR AS OTHERWISE INDICATED ON DRAWING.

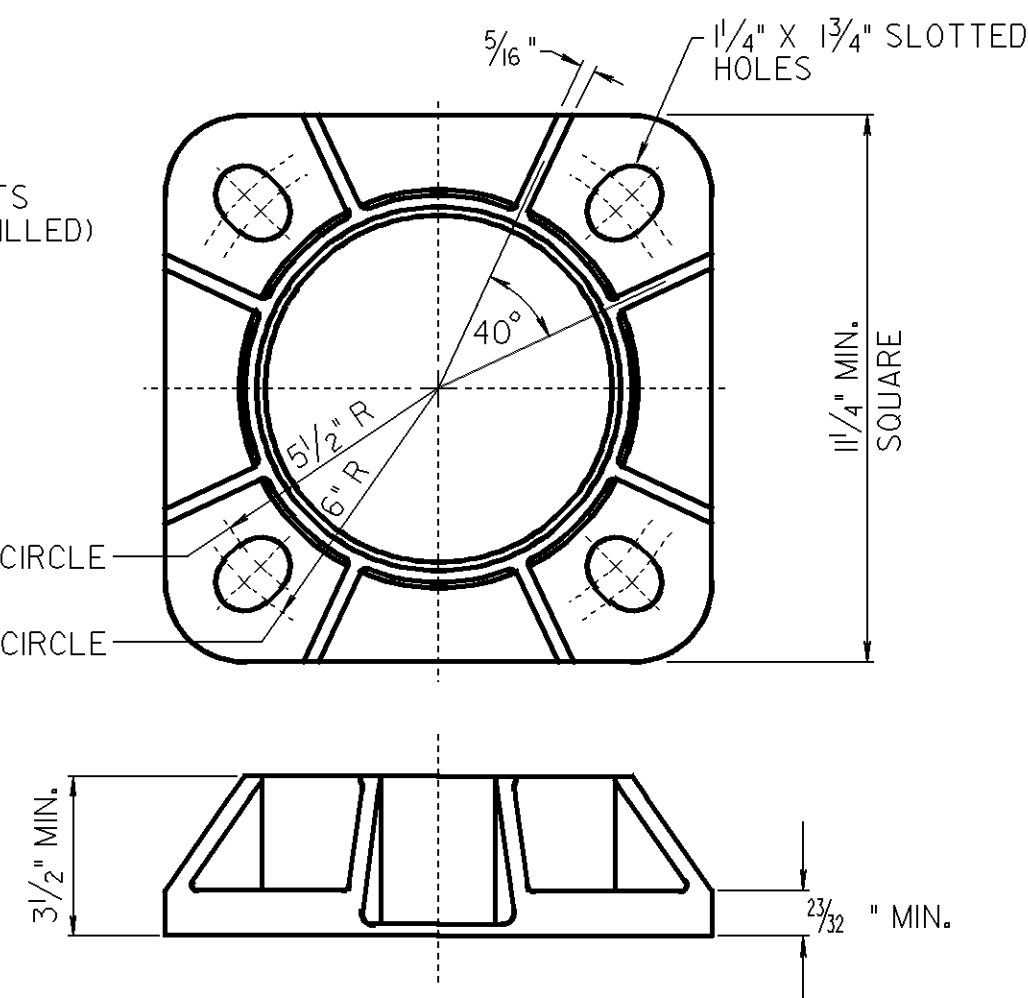
ALUMINUM CASTINGS, PERMANENT OR SAND MOLD FOR CLAMPS, AND SHOE BASE, TRADE DESIGNATION 356-T6.

B. FURNISH WITH EACH POLE: (EXCEPT FOR SCHEDULE 3)
(4) 1" DIA. X 3 3/4" LONG HEX HEAD BOLTS, ASTM A-193, GRADE B8, 8 THREADS PER INCH, CLASS 2 FREE FIT., STAINLESS STEEL
(4) - 2 1/2" O.D. X 1/16" I.D. X 3/8" THICK OR 2 3/4" O.D. X 1/16" I.D. X 1/2" THICK LARGE HEAVY STEEL FLATWASHERS GALVANIZED PER ASTM B695, CLASS 50.
(4) 1" DIA. PLAIN WASHERS, STAINLESS STEEL
(4) 1" DIA. LOCK WASHERS, STAINLESS STEEL
(4) 1"-BNC-2 HEX NUTS, STAINLESS STEEL
(4) BOLT COVERS ALUMINUM ALLOY 443.0 OR 360 WITH STAINLESS STEEL SCREWS.

C. ALUMINUM LIGHTING STANDARD ASSEMBLY SHALL BE DESIGNED TO ADEQUATLY SUPPORT A LUMINAIRE OF THE WEIGHT AND PROJECTED AREA AS CALLED FOR IN SCHEDULE 1 OR 2 ON THIS SHEET.

D. UNTAPERED 8" DIA. SECTION ON THE 37' SHAFT WILL BE PERMITTED, BUT UNTAPERED SECTION SHALL NOT EXCEED 25' MAXIMUM FROM BASE OF THE SHAFT.

E. A REINFORCED FLUSH HANDHOLE IS REQUIRED ON ALL S.B. LIGHTING STANDARDS AND SHALL BE LOCATED TWO FEET FROM BASE OF SHAFT. WHEN LOCATED BEHIND CHAIN LINK FENCE, THE HAND HOLE SHALL BE LOCATED ONE FOOT ABOVE THE FENCE. A FIBERGLASS HANDHOLE COVER SHALL BE USED. IT MUST BE MODIFIED FOR UV RESISTANCE. GROUND STUD (SEE L-01) SHALL BE INSTALLED OPPOSITE HAND HOLE.



SHOE BASE DETAIL

NEW JERSEY DEPARTMENT OF TRANSPORTATION

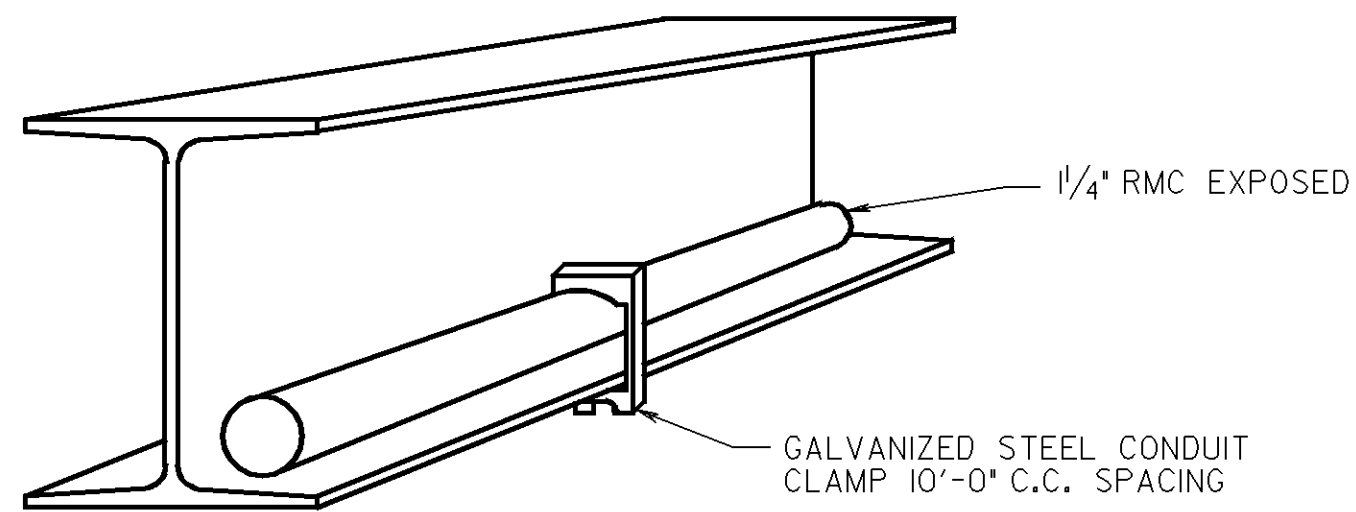
ELECTRICAL DETAILS

N.T.S.

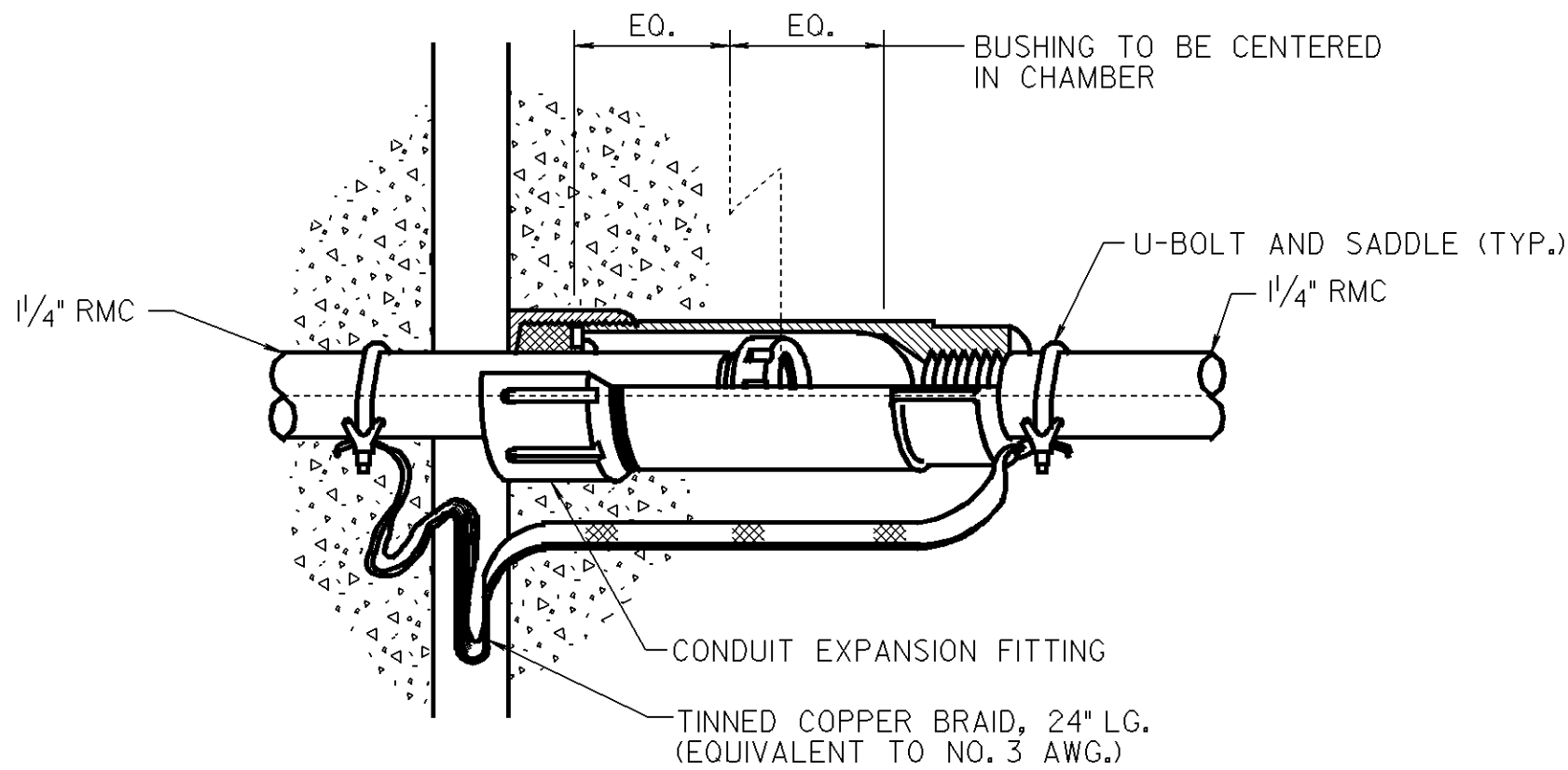
LIGHTING STANDARD ASSEMBLY

L-1801

REFERENCE



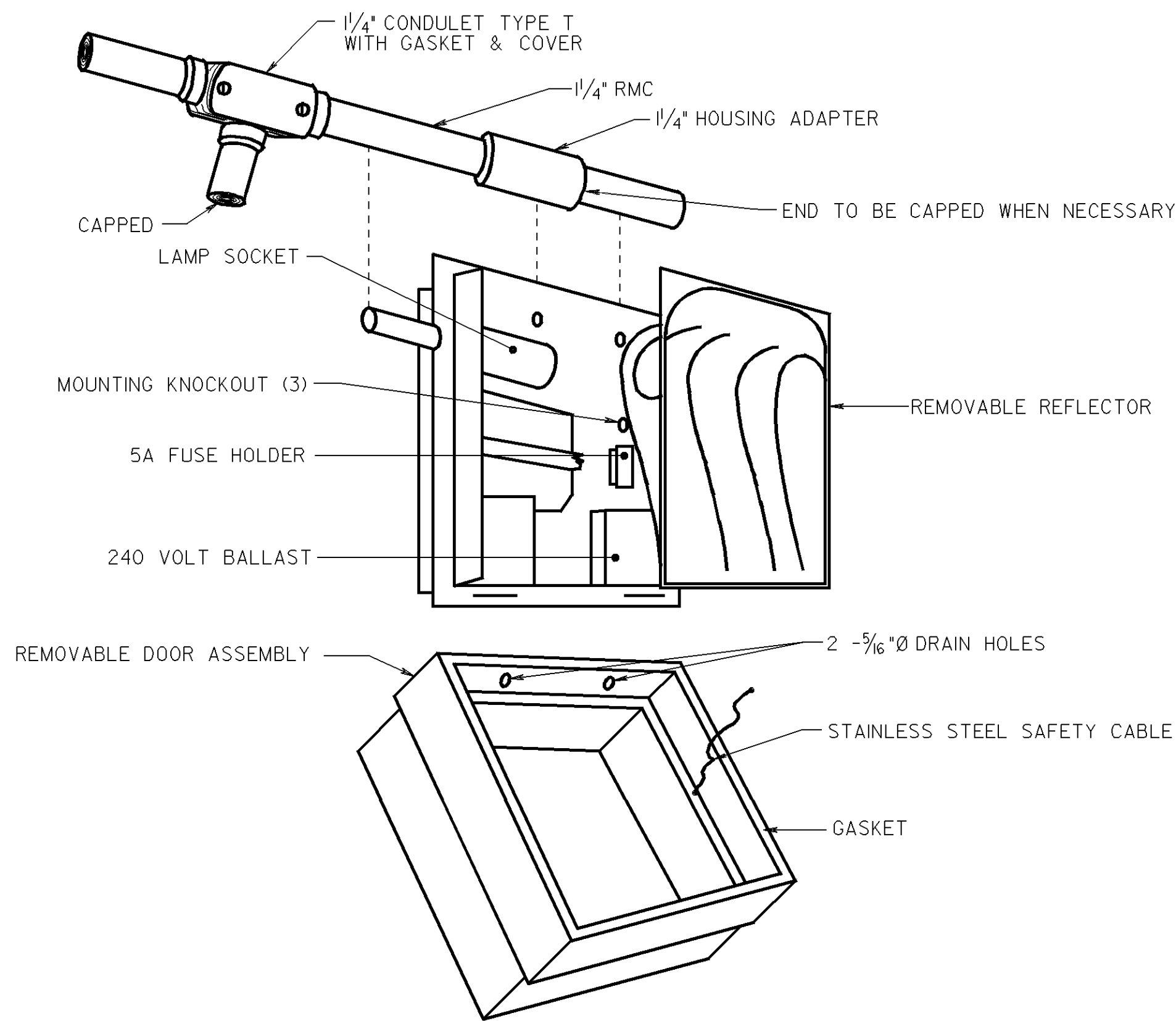
CONDUIT MOUNTING ON BRIDGE MEMBER



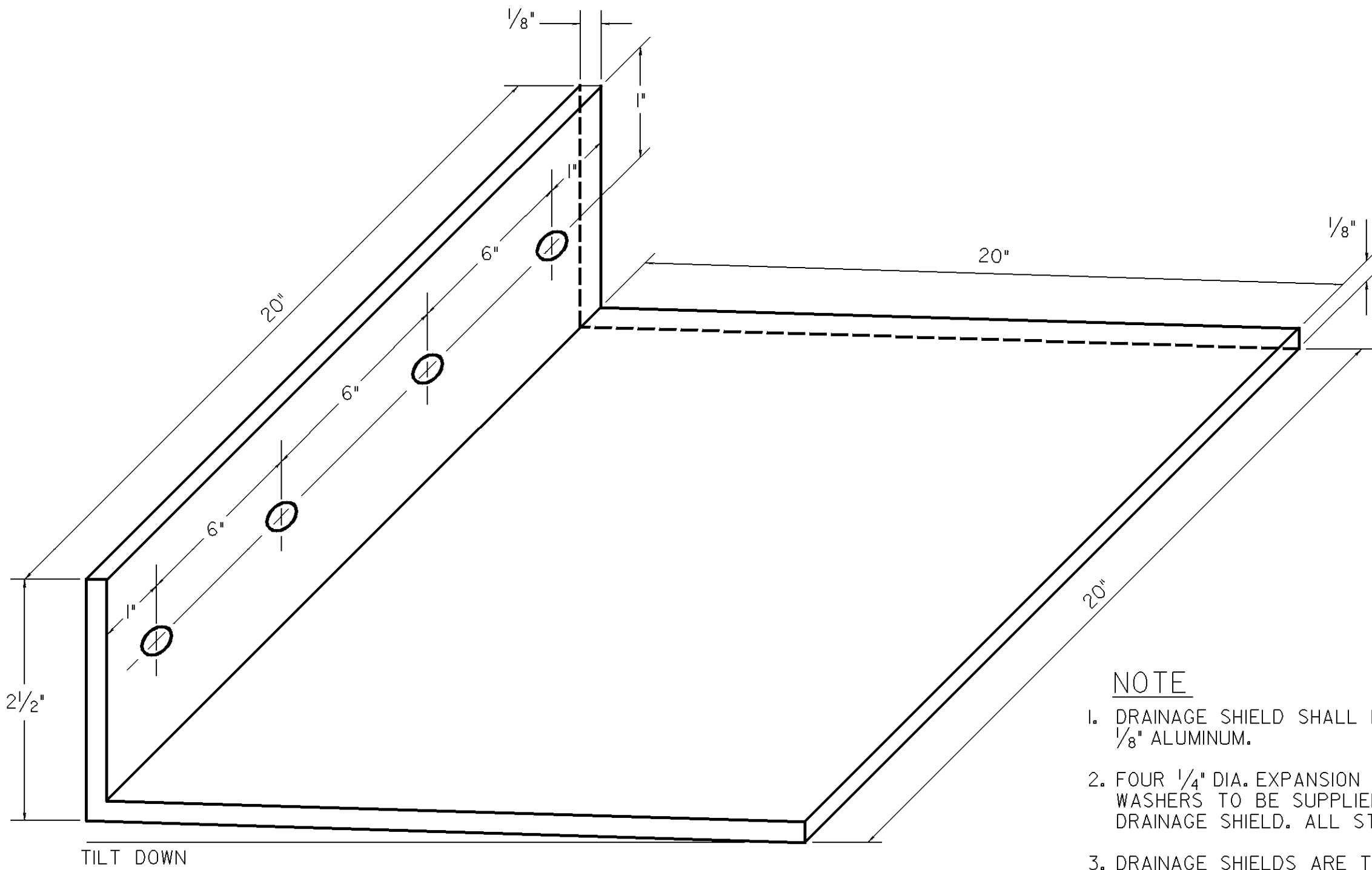
TYPICAL DETAIL
CONDUIT EXPANSION FITTING

NOTES:

1. EXPANSION FITTING TO BE INSTALLED AT ALL EXPANSION JOINTS
2. RIGID METALLIC CONDUIT AND FITTING SHALL BE HOT-DIPPED GALVANIZED.



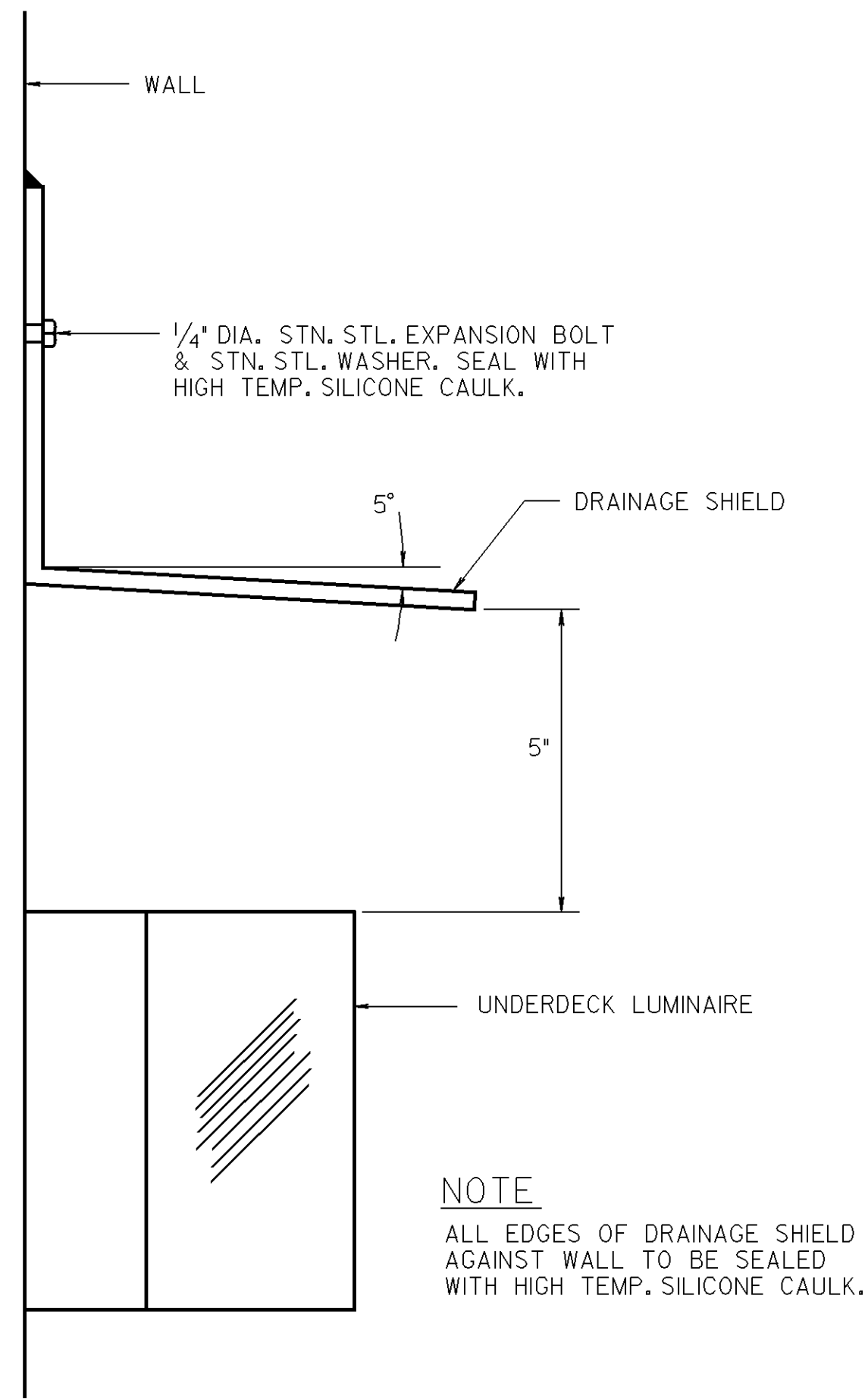
TYPICAL ULA MOUNTING



DRAINAGE SHIELD DETAIL

NOTE

1. DRAINAGE SHIELD SHALL BE MADE OF 1/8" ALUMINUM.
2. FOUR 1/4" DIA. EXPANSION BOLTS AND WASHERS TO BE SUPPLIED WITH EACH DRAINAGE SHIELD. ALL STAINLESS STEEL.
3. DRAINAGE SHIELDS ARE TO BE INSTALLED AT A DISTANCE OF 5" FROM TOP OF UNDERDECK LUMINAIRE.



TYPICAL DRAINAGE SHIELD INSTALLATION

NOTE

ALL EDGES OF DRAINAGE SHIELD AGAINST WALL TO BE SEALED WITH HIGH TEMP. SILICONE CAULK.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

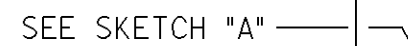
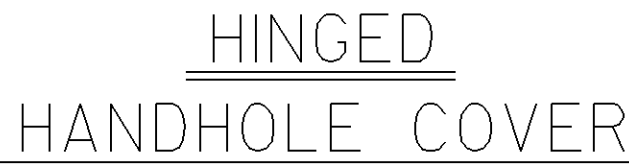
N.T.S.

DETAIL OF TYPICAL UNDERDECK LIGHTING
ASSEMBLY INSTALLATION

L-1901

[illegible]

BDC 000-002 - ORIGINAL SHEET



TOWER LIGHT STANDARD ASSEMBLY



TOWER BASE DETAIL



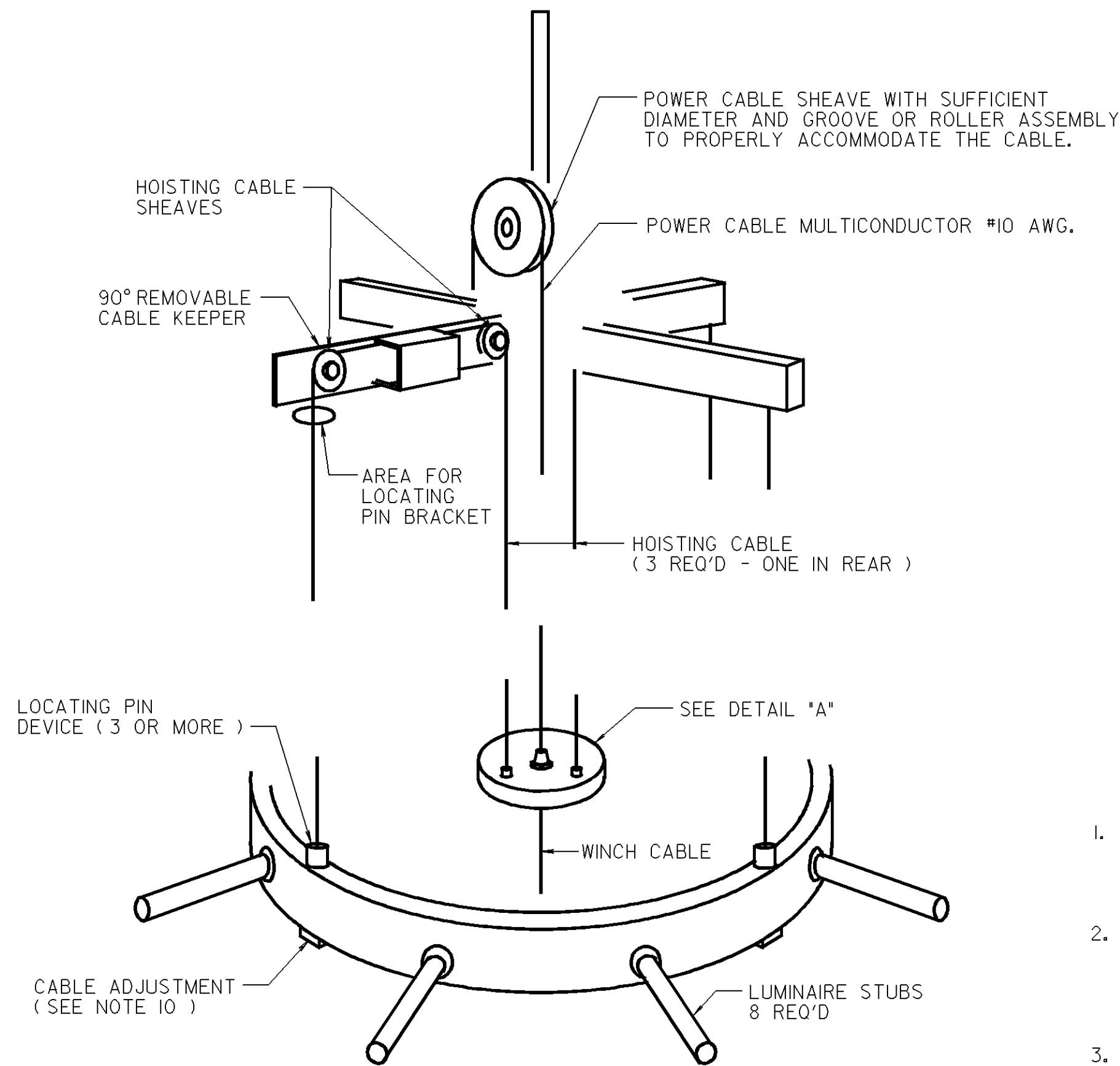
1. LOCK SHALL BE SUB-TREASURY LOCK NO. 03575 AND KEYS ALIKE FOR KEY NO.5 AVAILABLE FROM THE AMERICAN HARDWARE CO. OF NEW BRITAIN, CONN. OR A TUMBLER LOCK NO. 15481 ARS AND KEYS ALIKE FOR KEY NO.2 AVAILABLE FROM CORBIN LOCK CO. NEW BRITAIN, CONN.
2. DETAILS ARE SCHEMATIC. MODIFICATIONS ARE PERMITTED. ALL COMPONENTS MUST BE APPROVED BY THE NEW JERSEY DEPARTMENT OF TRANSPORTATION BEFORE ACCEPTANCE OF ONE POLE.
3. NEOPRENE DOOR GASKET IS REQUIRED.
4. TOWER LIGHTING STANDARD ASSEMBLY SHALL BE INSTALLED IN THE AREA BEYOND RECOVERY DISTANCE OR BEHIND THE GUIDE RAIL.
5. A GALVANIZED SCREEN, DOUBLE RAP AROUND THE BASE OF POLE IS REQUIRED.
6. THE GALVANIZED SCREEN SHALL HAVE NO MORE THAN 1/2" OPENINGS AND HELD TOGETHER WITH STAINLESS STEEL NUTS, BOLTS AND FLAT WASHERS.
7. ALL WELDING IS TO BE DONE WITH E-80T-1 WIRE.
8. THE PIPE TENON SHALL BE WEATHERING STEEL COMPOSITION CONFORMING TO ASTM A588.
9. SLIP JOINTS ARE NOT PERMITTED IN THE MANUFACTURE OF THE POLE.
10. ALL MISCELLANEOUS HARDWARE INCLUDING NUTS AND BOLTS SHALL BE STAINLESS STEEL CONFORMING TO AISI 300 SERIES.
11. BOLT HEADS AND NUTS SHALL BE HEXAGONAL.
12. 2 LEVELING HEX NUTS, 2 HOLD DOWN HEX NUTS AND ONE FLATWASHER PER ANCHOR BOLT.
13. GROUTING UNDER THE POLE IS NOT PERMITTED.
14. MANUFACTURER SHALL DETERMINE THE PROPER LENGTH TO PROVIDE A POSITIVE SEAT OF THE HEAD FRAME ASSEMBLY.
15. EACH POLE SECTION SHALL HAVE ONLY ONE LONGITUDINAL SEAM.
16. ANCHOR BOLT MATERIAL SHALL BE ASTM A36, M55, WITH A 55,000 YIELD MIN.

ELECTRICAL DETAILS
N.T.S.

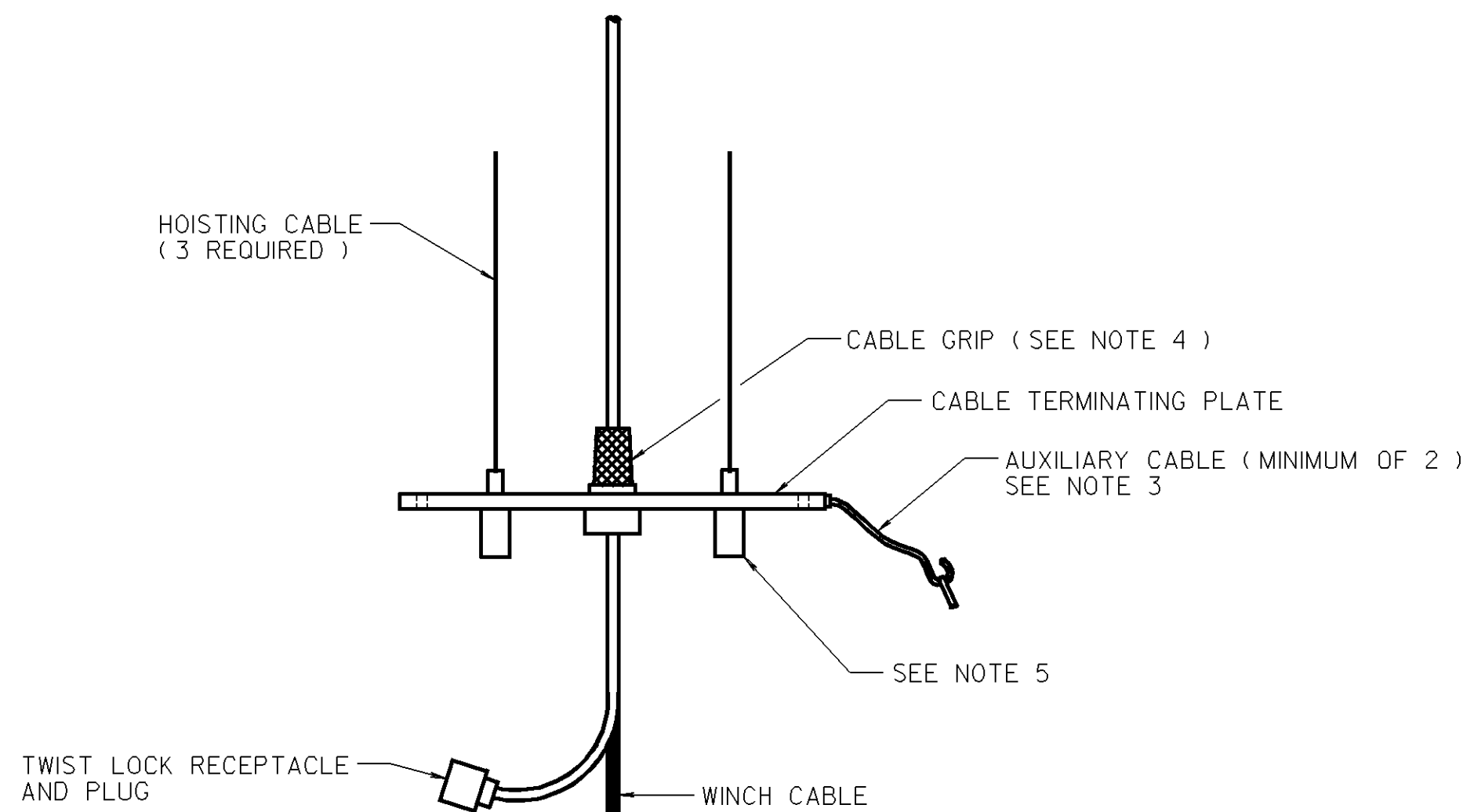
L-200I
SHEET 1 OF 2



REFERENCE



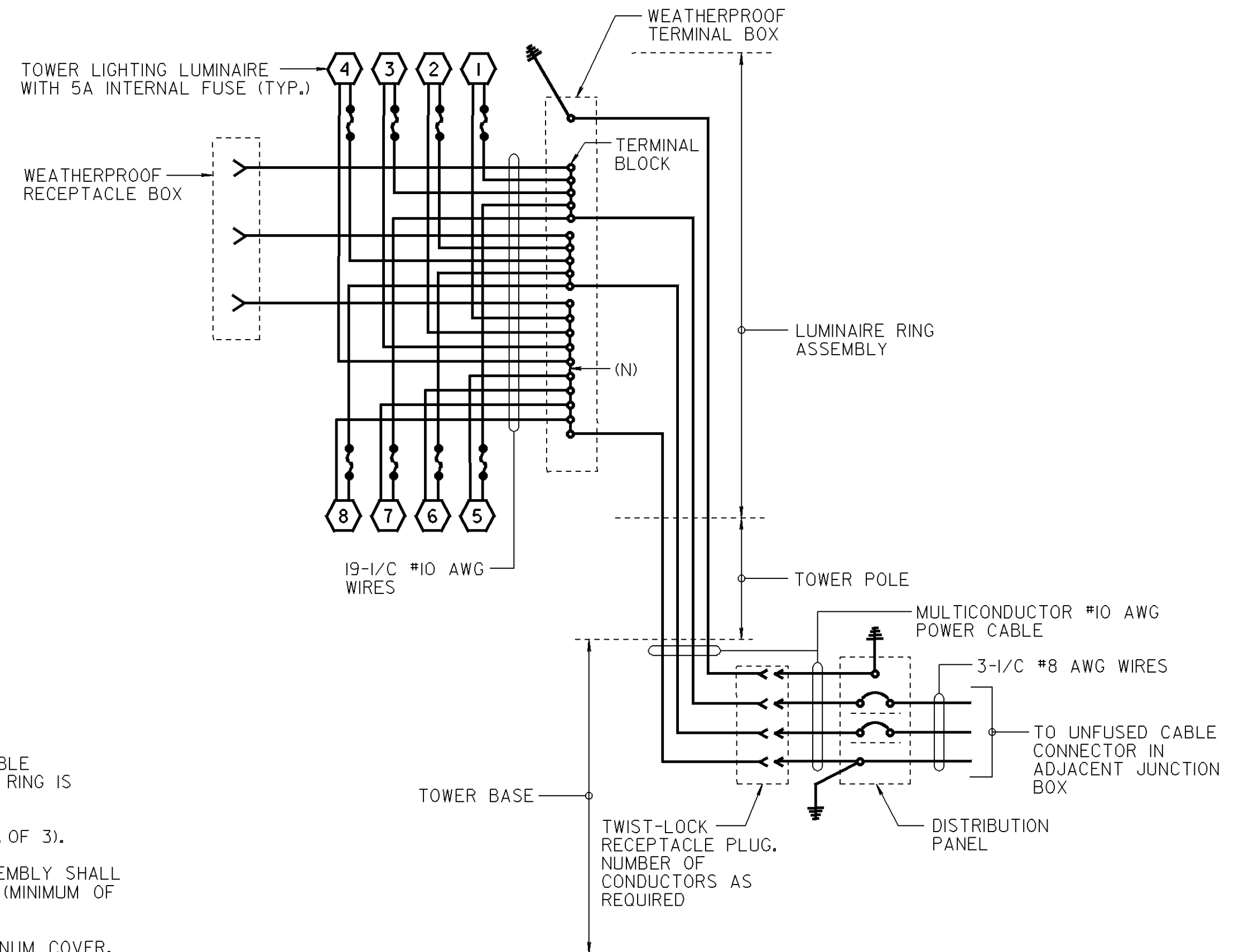
LUMINAIRE RING ASSEMBLY



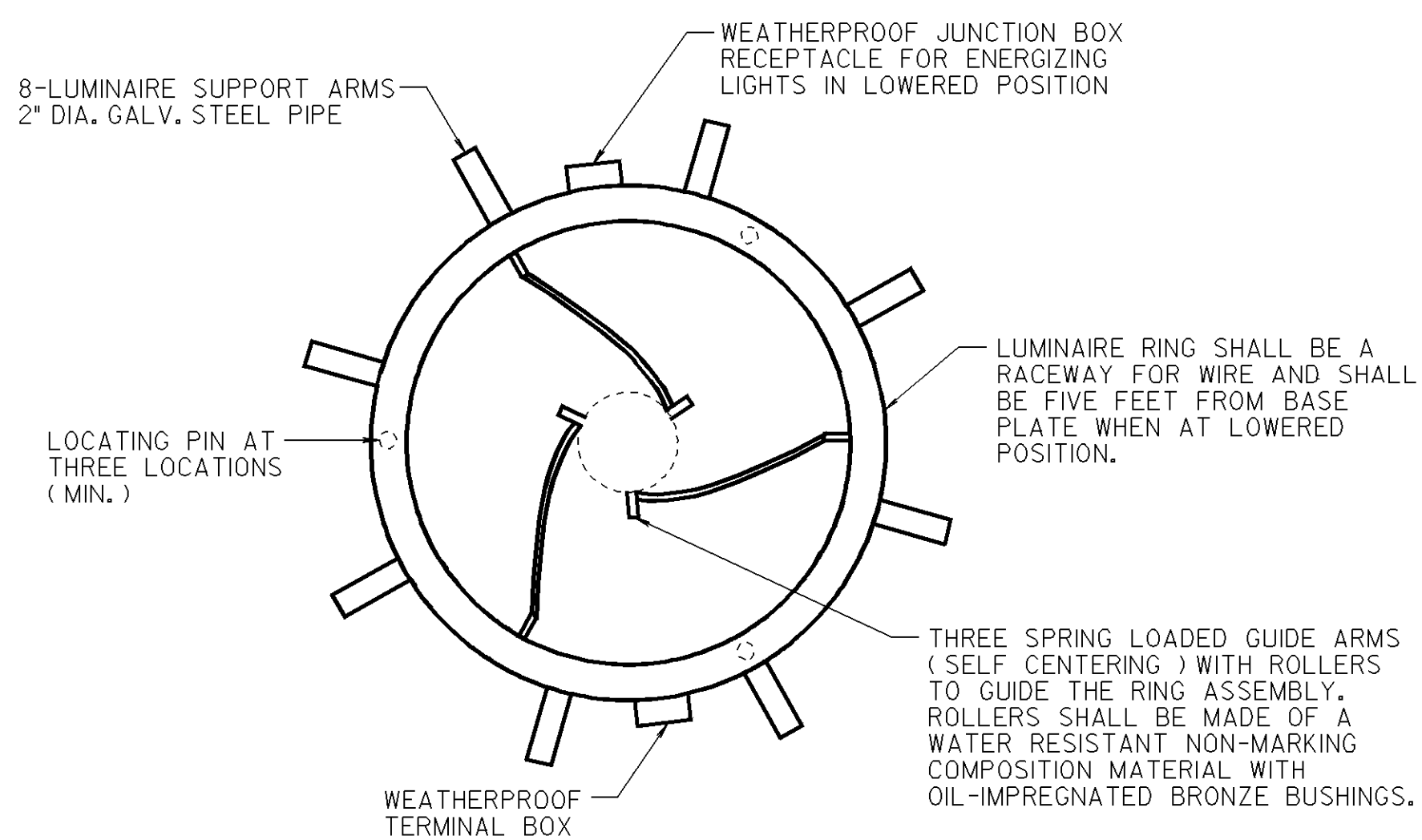
DETAIL 'A'

NOTES:

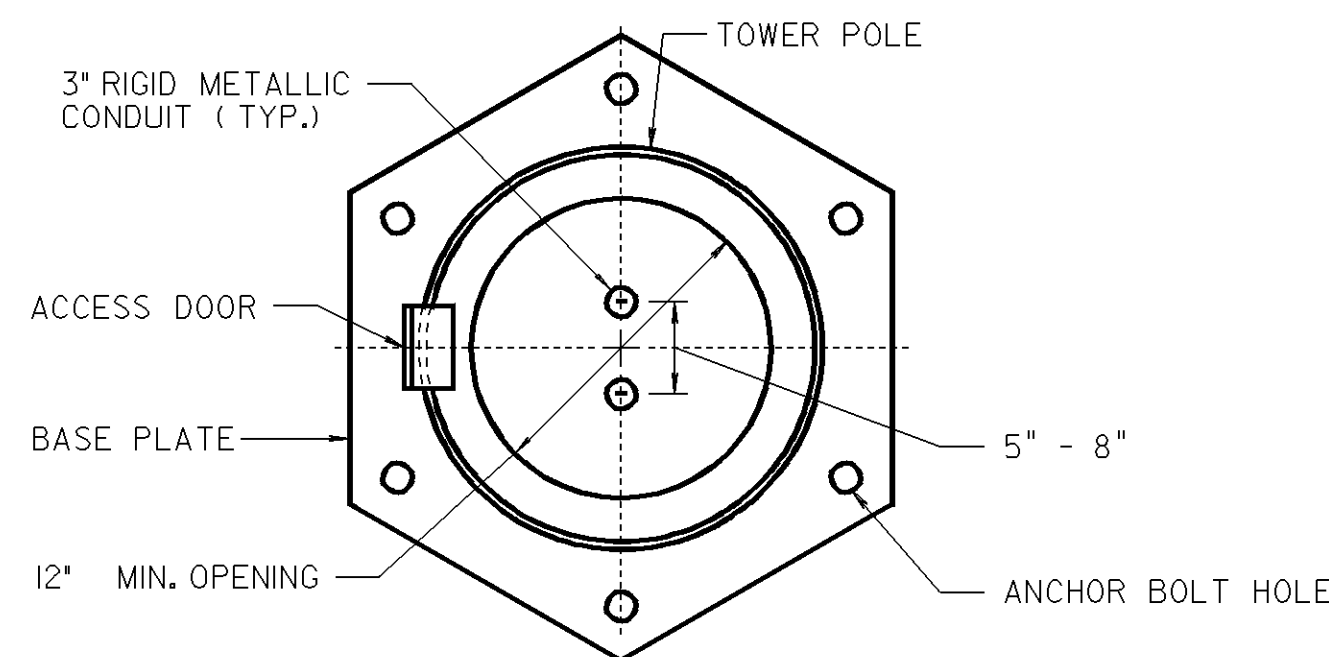
1. LIGHTING DISTRIBUTION MUST BE PER NEW JERSEY DEPARTMENT OF TRANSPORTATION SPECIFICATION EB-LHPS-4 AND MUST BE APPROVED BY THE N.J.D.O.T..
2. ARROW ON GENERAL PLANS DENOTES ORIENTATION OF LIGHTING DISTRIBUTION REQUIRED FOR POSITIONING OF LUMINAIRES. ARROW DIRECTIONS ARE SHOWN FOR EACH TOWER ASSEMBLY ON RESPECTIVE PLAN SHEET.
3. A BOTTOM LOCKING DEVICE WILL BE PROVIDED TO REMOVE TENSION FROM THE WINCH SUBJECT TO THE ENGINEERS APPROVAL.
4. THE POWER CABLE SHALL BE PROVIDED WITH AN APPROVED STRAIN RELIEF DEVICE.
5. EACH HOISTING CABLE SHALL BE PROVIDED WITH A SPRING LOADED SHOCK ABSORBER TO PREVENT CABLE STRETCH DUE TO MOVEMENT OF THE TOWER WHEN RING IS IN THE UPPER POSITION.
6. THERE SHALL BE SPRING LOADED GUIDE ARMS (MIN. OF 3).
7. THE LUMINAIRE RING ASSEMBLY AND SUPPORT ASSEMBLY SHALL BE PROVIDED WITH SUITABLE POSITIONING DEVICES. (MINIMUM OF THREE (3) LOCATING PINS.)
8. HEAD ASSEMBLY WILL BE PROVIDED WITH AN ALUMINUM COVER.
9. THE ONLY OPENINGS ON THE HEAD ASSEMBLY SHALL BE THE HOLES THROUGH WHICH THE LUMINAIRE RING HOISTING CABLES AND POWER CABLE PASS.
10. ALL CABLES SHALL BE ADJUSTED FROM THE ACCESS DOOR.



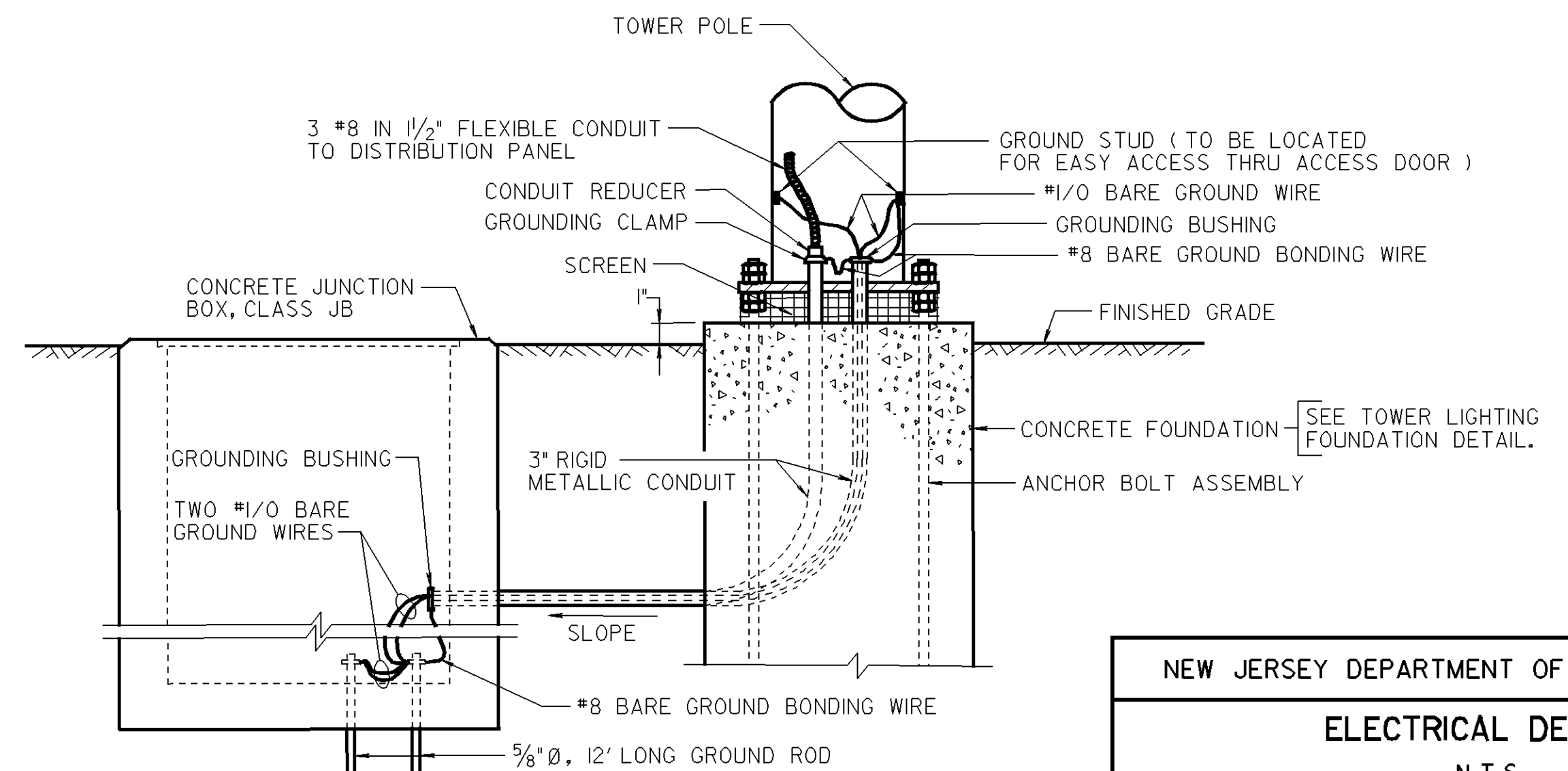
TYPICAL TOWER LIGHTING STANDARD DIAGRAM



LUMINAIRE RING ASSEMBLY DETAIL



BASE PLATE AND CONDUIT INSTALLATION DETAILS



TOWER INSTALLATION AND DETAILS

NEW JERSEY DEPARTMENT OF TRANSPORTATION

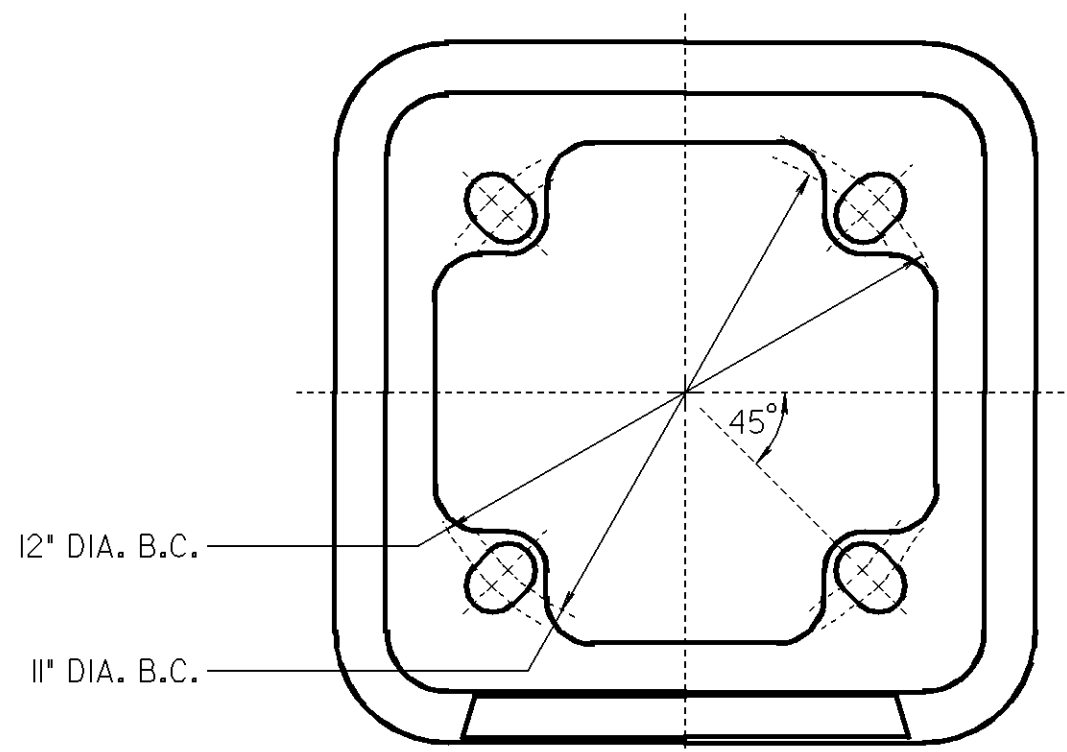
ELECTRICAL DETAILS

N.T.S.

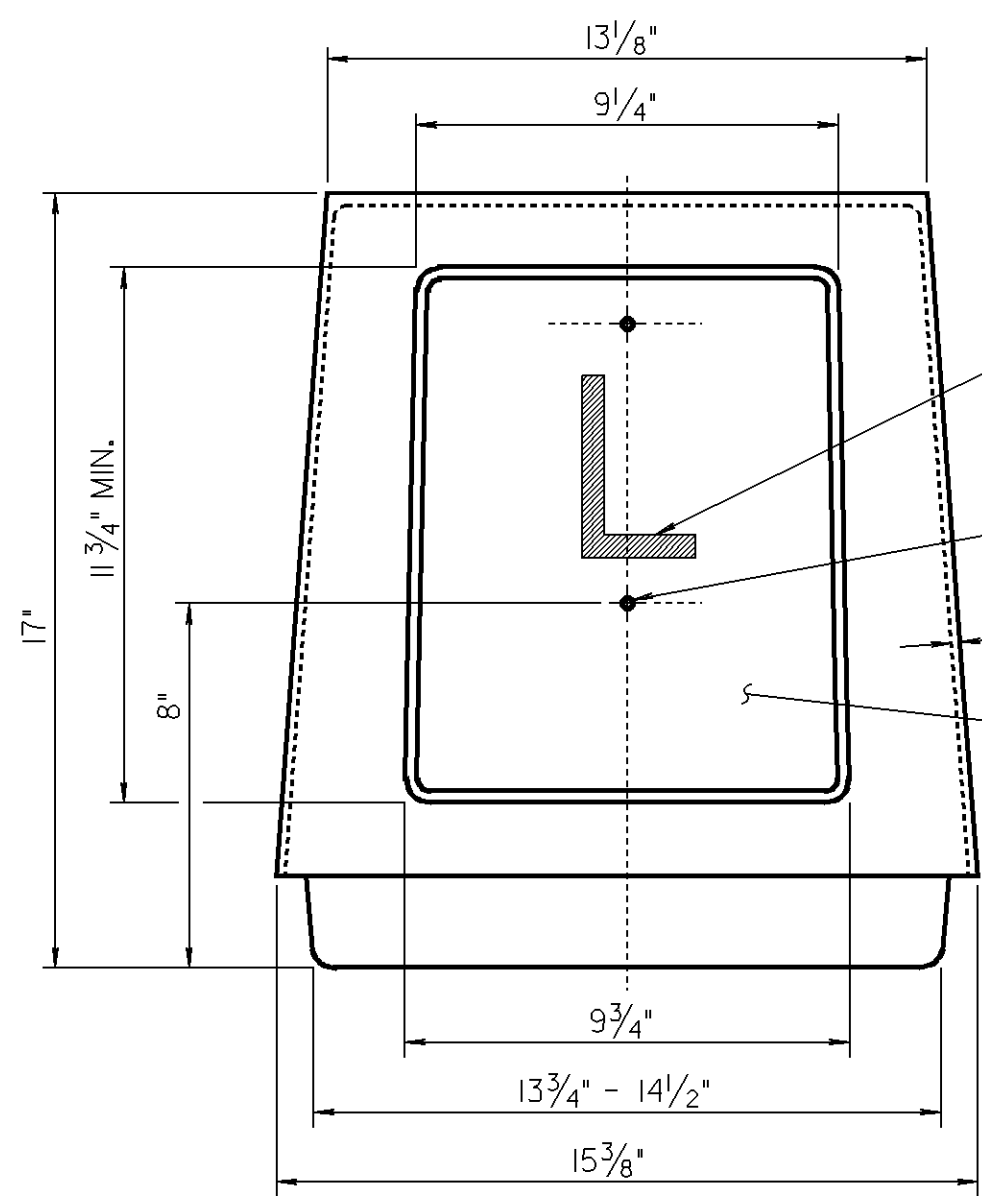
TOWER LIGHTING STANDARD ASSEMBLY
TYPE TL-100-8

L-2001
SHEET 2 OF 2

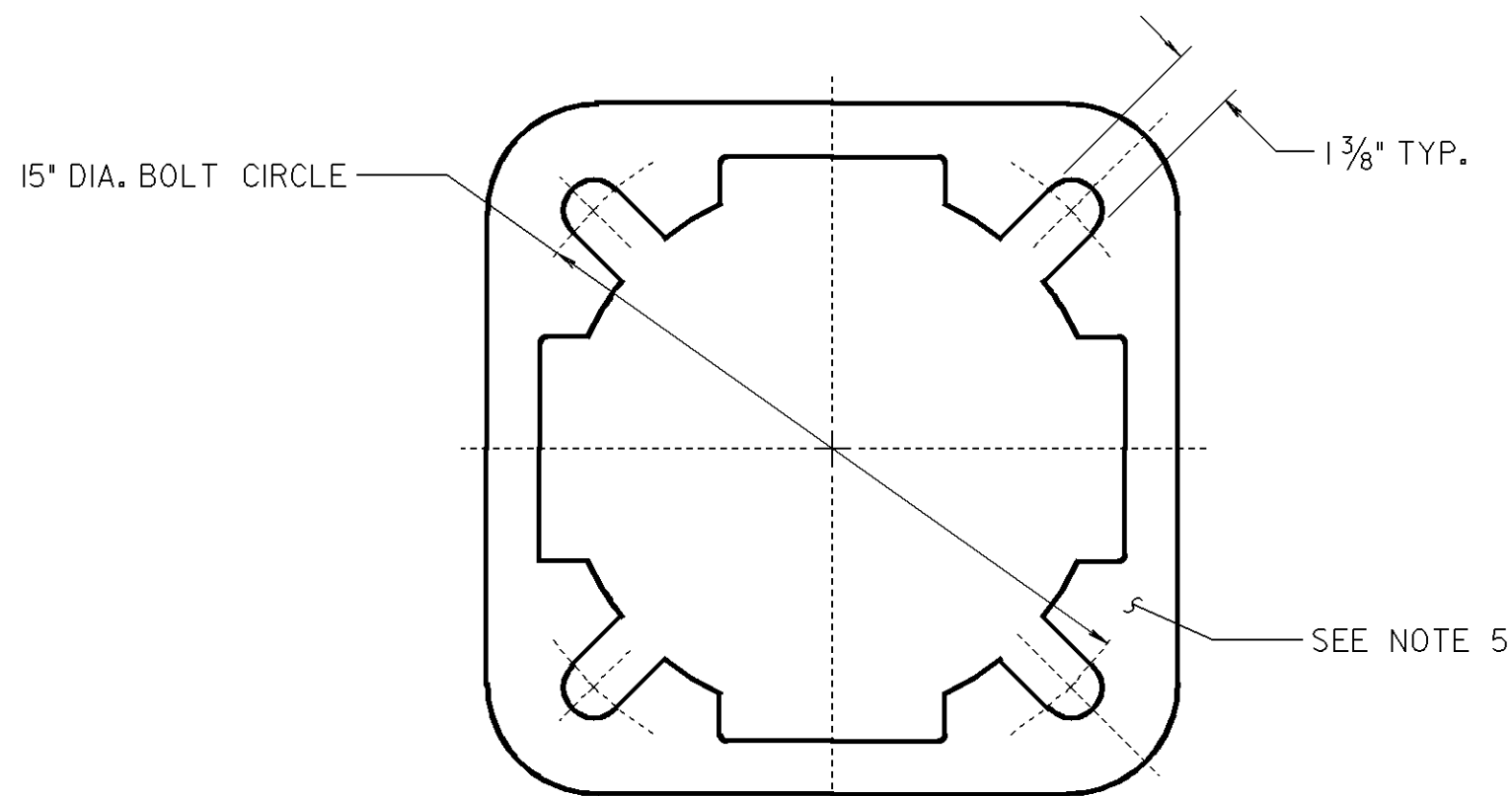
REFERENCE



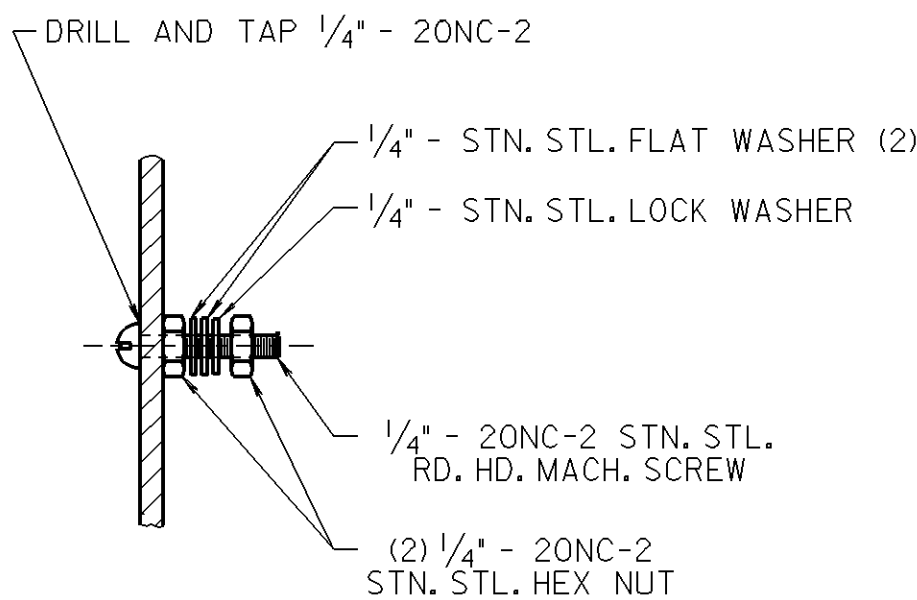
TOP VIEW



ELEVATION

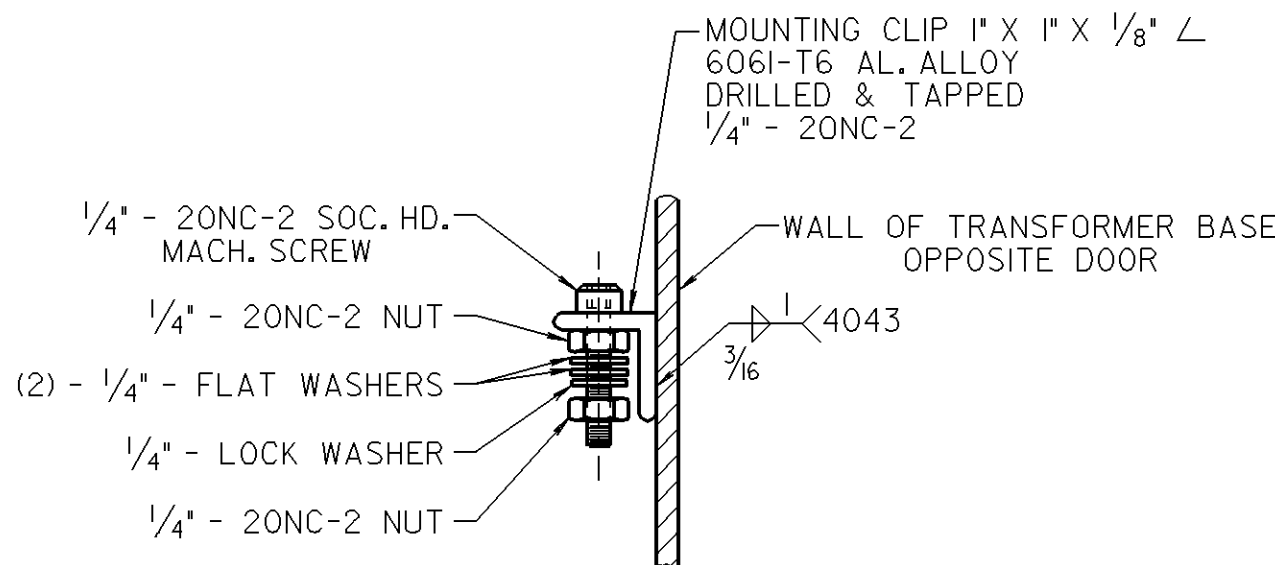


PLAN VIEW OF BASE



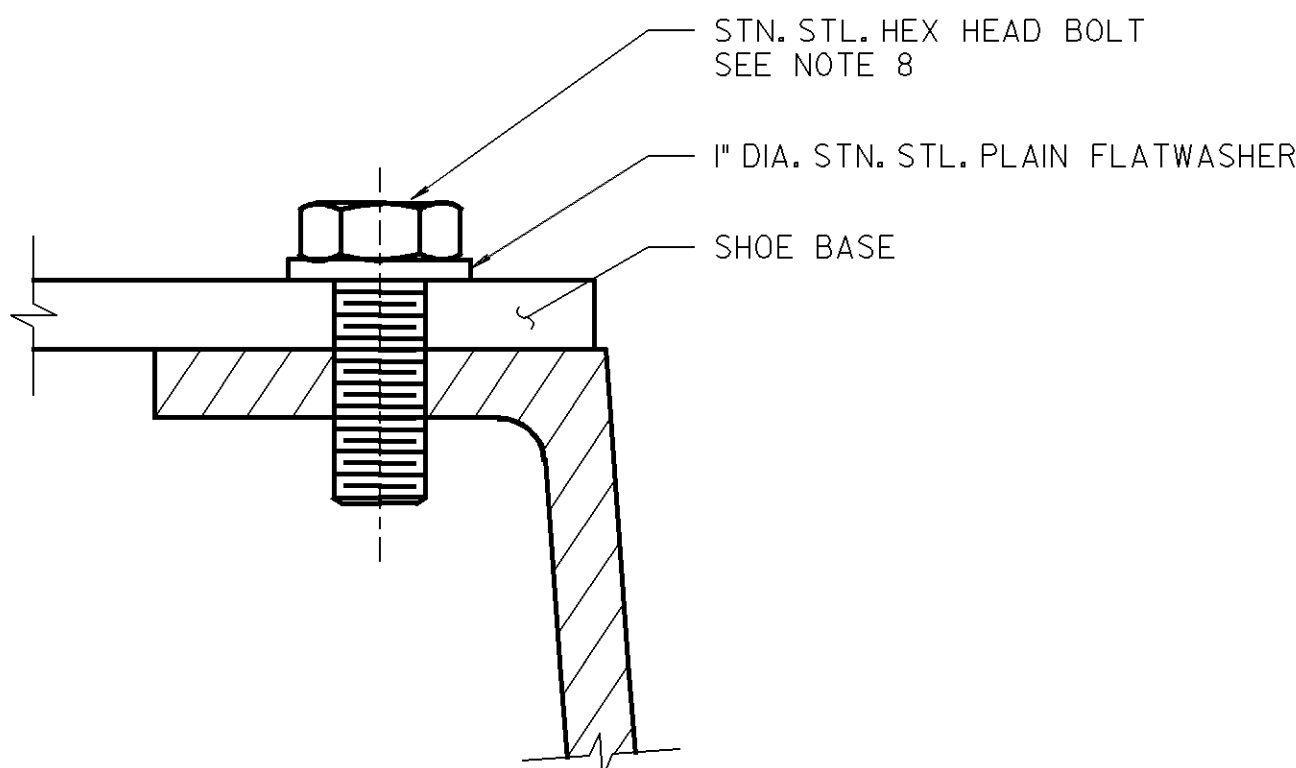
DETAIL 'A'

GROUND STUD DETAIL
OPPOSITE DOOR OPENING



ALTERNATE DETAIL 'B'

GROUND STUD DETAIL
OPPOSITE DOOR OPENING



BOLTING DETAIL

NOTES

1. ATTACH DOOR TO BASE WITH AN APPROVED VANDAL RESISTANT LOCKING DEVICE USING A 1/4" OR 3/8" STN. STL. GRADE B8 SOCKET HD. CAP SCREW. AS AN ALTERNATE, A FIBERGLASS DOOR WITH UV INHIBITERS MAY BE UTILIZED.
2. HOLE SHALL BE OF SUFFICIENT DIAMETER TO ACCEPT 1" DIAMETER BOLTS.
3. CERTIFICATIONS SHALL BE FURNISHED THAT ALUMINUM ALLOY AND TEMPER SHOWN MEET REQUIREMENTS AS SET FORTH BELOW OR AS OTHERWISE INDICATED ON DRAWING. ALUMINUM CASTINGS, PERMANENT OR SAND MOLD FOR TRANSFORMER BASE TRADE DESIGNATION 356-T6.
4. ALL DIMENSIONS OF CASTINGS SHALL BE $\pm 1/32"$.
5. UNDERSIDE OF TRANSFORMER BASE SHALL BE COATED WITH BITUMINOUS PAINT.
6. UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
7. THE LIGHTING STANDARD ASSEMBLY MUST BE CERTIFIED TO MEET 1985 AASHTO BREAKAWAY CRITERIA FOR STRUCTURAL SUPPORTS UTILIZING A TYPE APPROVED TRANSFORMER BASE.
8. DIAGRAM IS FOR METHOD OF INSTALLATION.
9. THE MANUFACTURER SHALL SUPPLY ALL OTHER HARDWARE WHICH HE DEEMS NECESSARY TO INSTALL THE BASE AS WELL AS INSTRUCTION FOR INSTALLATION.



To Plot Multiple Plan Sheets (MultiPlot Button)

Entire plan sets of full sized plan sheets can be plotted in one step by using the MultiPlot Button.

[Click here -->](#)
to run MultiPlot

Quick Instructions

- 1: Check your default printer's settings
- 2: Click the MultiPlot Button and enter the page #'s to plot
- 3: Pick up your plot set when done

The MultiPlot Button will allow the plotting of as many consecutive plan sheets as specified in a range without over stressing your plotter's or system's memory, a major cause of system crashes and failed print jobs when plotting multiple large graphics.

Requirements:

1. A plotter or printer with appropriate paper size capable of making "full sized" plots at 100% scale.
2. Up to date plotter drivers (check your manufactures website)
3. Up to date Adobe Acrobat Reader, 4.05 or better
4. A plotter properly set up as your DEFAULT printer

Instructions

Step 1: Multi Plot utilizes the default settings of your system's default printer/plotter. Be sure to **set the default parameters** (paper size, orientation, etc) of your plotter to the same settings that produce a successful single plot. Although you should consult your system's administrator or help files on how to select a default printer and change it's default settings, this is the general procedure:

1. From the Windows Task Bar, click Start---Settings---Printers
2. Select a printer/plotter; and make it your DEFAULT by choosing File→Set as Default
3. Check the default SETTINGS of the plotter by choosing File→Document Defaults
4. **Check the paper size and the paper's orientation.** These will be the settings used by MultiPlot
5. The paper should be 24"x36" (an Architectural D) or larger for most 'full size' plots.
6. **NOTE: some systems may require users to have administrative privileges to change default plotter settings. System Administrators: See note in "Trouble Shooting" section below.**

Step 2: Go to the Multi Plot button page and, using the '**HAND TOOL**', click the Multi Plot button. Enter the **page number* to start plotting at** and click OK. Enter the **page number to stop plotting at** and click OK.

* Page numbers are displayed at the bottom of the Acrobat window. A page's number is located next to the page's name. (ex: **[Construction7 (13 of 157)]** would be page 13 ... **[Construction Detail10 (142 of 157)]** would be page 142. Page numbers are also displayed when you click and move the main display windows' scroll bar.

Step 3: Choose whether to halt the process after the first sheet is plotted to quality check the first plot before continuing with the rest of the sheets. This is **strongly recommended** because once the printing process begins it is very difficult to interrupt or cancel, and no one wants a large number of bad plots. All of the succeeding plots will have the same quality attributes of the first plot.

Step 4: If you chose to check the first plot in step 3, and it passes your inspection, click "No" (do not quit the rest of the plot job) in the pop up box. If your settings are incorrect click "Yes" to cancel the rest of the print job, and make the necessary corrections to your printer's default settings. Note: Due to plotter lag time this box usually pops up before the plot appears. Be patient with your equipment!

Troubleshooting:

1: The print was rotated and/or was on the wrong size paper

Multi Plot utilizes the default settings of your system's default printer/plotter. Paper size and paper orientation can only be changed by changing the system's default printer's Document Defaults. See Step 1 above, or contact your System Administrator to do this.

2: The print was at the wrong scale

While Multi Plot plots exclusively at scale = 100%, other scaling factors can be achieved by manipulating the settings at the printer's Document Defaults level (see Step 1 above). Many printer/plotter manufacturers (like HP for example) provide printer/plotter drivers that allow for scaling at the hardware level. Check your manufacturers website for a driver update if you do not yet have this capability.

3: A Special Note for System Administrators

I have found it very useful to "Add a Printer" on the server utilizing existing ports, drivers, and hardware. I name it something like "HP8000 11x17Landscape" (which we would use for 'half scales') and then share the printer, and set the default settings as noted above. "Add(ing) a Printer" for 24"x36" paper plots the same way will cover most of your users full and half scale plotting needs. :>)